PACIFIC PULP & PAPER INDUSTRY

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Volume 6 Number 13

DECEMBER
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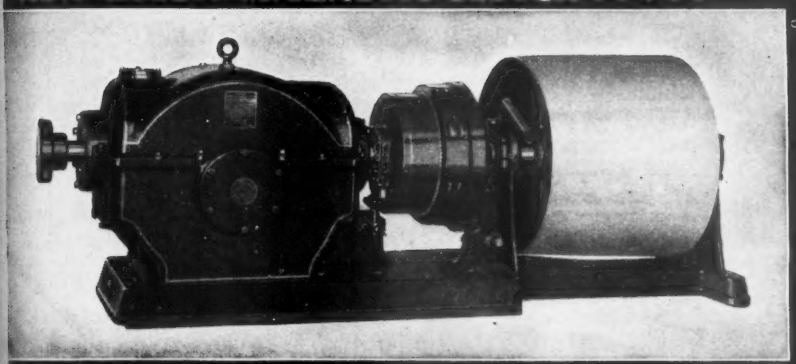

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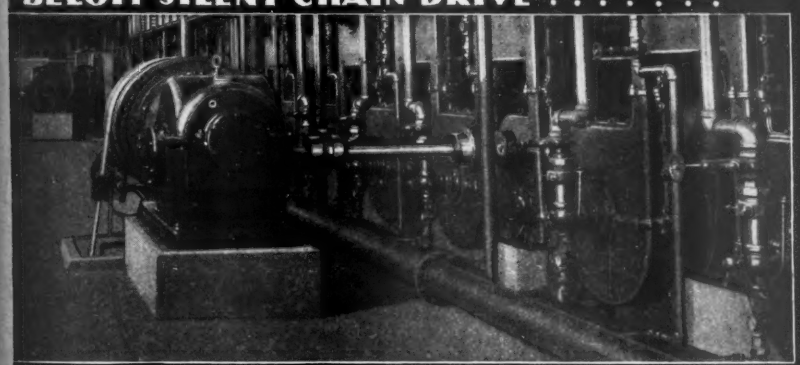

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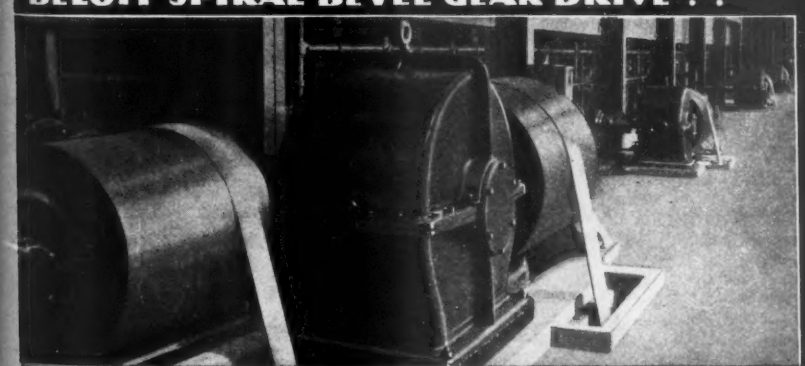

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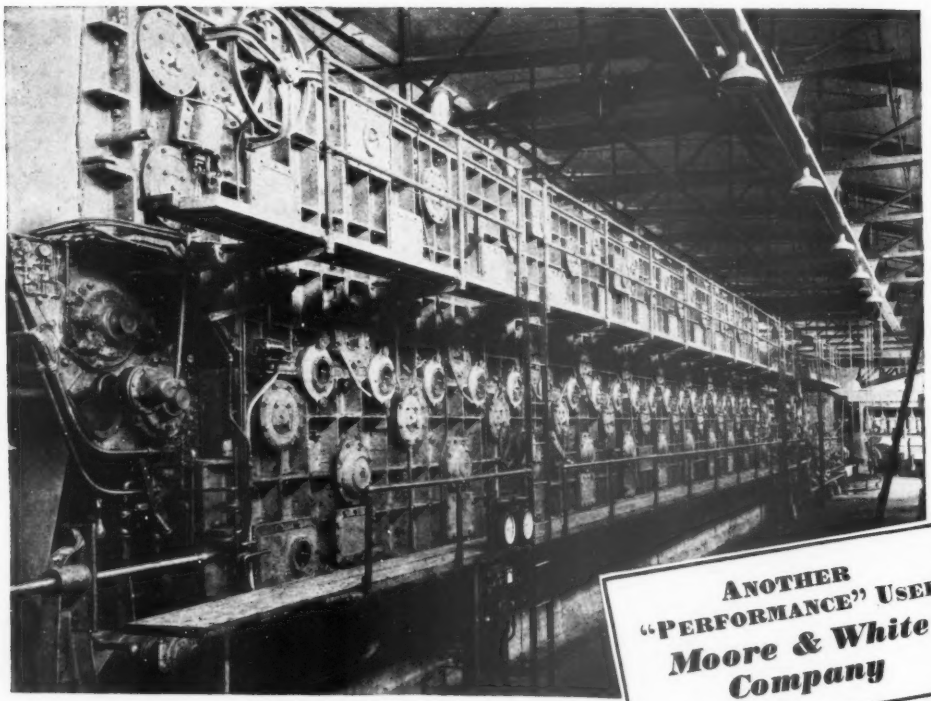

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PULP and PAPER

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WE INDICT THE PRESS

We indict the daily press of the United States.

The charge is: "Patriotism for Revenue Only".

We swear in as witnesses 2,000,000 American citizens deprived of employment, $3,000,000,000 in capital denied the opportunity of investment in American enterprises.

The product of the press is idealism. An intangible commodity. It sells that commodity at home. It invokes an air of sincerity in the sale. It employs a halo of its own construction.

The raw material of its factory, the chief item of purchase, is news print. It buys that abroad. It fights for that privilege to purchase abroad. It is organized to protect that privilege.

In that organization it has resorted to unholy alliance to increase its power. It consorts with the international banker, a character in disrepute. It allies itself with the associated importers, who vow no allegiance to the American flag. It joins with the foreign lobbyist, whose only interest is special privilege. It conspires with this unholy three against the best interests of American industry and national welfare.

It has robbed America of industry worth $200,000,000 in direct payrolls. It has undermined the value of our domestic forest resources. It has contributed more to the nation's distress of unemployment than any other industrial group. It has turned thousands of jobs over to foreign workmen. It has brought hunger and want to American women and children.

It has developed America's foreign trade as has no other industrial group, but for that achievement it deserves not praise but censure. It has built up the imports of paper and wood pulp to third rank among all United States imports, to first rank among imported commodities capable of being produced at home. It has imposed instability upon the domestic paper industry for twenty years.

We indict the daily press of the United States with obstructing justice. With coercion of the representatives of the people. With intimidation. With masquerading under a false banner. With impersonating America.

An emergency exists. Depreciated monies of the world threaten the industrial security of the nation. The crisis involves serious potential social consequences.

The problem is our own. It is not the concern of other nations. The means of correction, of self-preservation, lie within our own hands, and only in our hands.

Legislation of a new kind, to meet a new kind of emergency, is needed, urgently needed. Attempts to secure that legislation in the earlier session of the present Congress were defeated by connivance of the American Newspaper Publishers' Association, aided and abetted by the unholy three. The association placed patriotism after revenue, national welfare after personal profit.

The daily press of the United States has won fair title to its epithet, "the most selfish class in America". And to the supplementary label, "the most short-sighted". It has fostered a theoretical internationalism, for revenue only. It has disregarded the consequences to American industry, to American payrolls, to American consumers, to American advertisers. It has been fatuous enough to consume its seed without thought of the harvest.

We indict the daily press of the United States. We excuse from that indictment, and tender our apologies to, that courageous minority of the daily press which has, in broader vision, foreseen the consequences and championed American industry in deed as well as in word.

We indict on the charge of "Patriotism for Revenue Only".

What's Best for America?

.... on the wood pulp issue

IN ANY CONTROVERSY in which the pulp and paper industry of the United States finds itself involved there can be only one approach to the solution. It is not "What is best for the pulp and paper industry?" It is not "What is best for the converting mills?" It is not "What is best for the self-contained mills?" It can only be:

"What is best for America?"

There are in the United States 550 converting paper mills, that is, mills which must purchase wood pulp, approximately 200 self-contained paper mills, and a much smaller number of independent pulp mills. On a numerical comparison of mill units the converting mill seems to have preponderance of about 2 to 1. It is, however, misleading to weight the industry according to mill units on a numerical basis. The comparison must be on a basis of capacity to produce, number of employees on direct payrolls and the employment possibilities involved in the auxiliary industries which provide the principal industry with raw materials, equipment, supplies, and services.

When compared on a tonnage basis it has been shown that the self-contained mills have a potential annual paper capacity of 6,103,000 short tons per year, whereas the converting mills have a comparable capacity of 7,897,000 tons. Reduced to a percentage basis it appears that the self-contained mills are in the minority with 43.6 per cent of the capacity of the industry, whereas the converting mills represent 56.4 per cent.

However, the controversy in the industry has been raised on the question of wood pulp. Therefore the question must be decided only on the basis of relative importance of wood pulp to the two opposing factions in the controversy, namely, the self-contained mills and the converting mills. The total consumption of wood pulp in the United States in 1931 was 5,950,844 tons, of which 4,356,036 tons were of domestic manufacture. The total estimated paper production in the United States in 1931 was 9,162,000 tons. The difference between these two figures—not allowing for pulp shrinkage in conversion—was 3,212,000 tons. The difference between pulp consumption and paper production represents approximately the raw materials other than wood pulp which went into the manufacture of paper—material such as waste paper, rags, and straw.

The average percentage requirements of new wood pulp entering into the manufacture of the various grades of paper has been computed by the American Paper & Pulp Association. By applying these average percentage requirements to the two groups of mills, self-contained and converting, it develops that the self-contained mills, altho representing only 43.6 per cent of the paper tonnage capacity of the industry, required for their use 61.7 per cent of the total wood pulp consumption. The converting mills on the other hand, altho representing 56.4 per cent of the paper tonnage capacity, include in their group an excessive proportion of those mills making the heavier products, such as paper board, wherein the new pulp requirements are relatively small as compared to other material such as waste paper.

Therefore on this basis of "How important is wood pulp to each of the two groups of mills?" it develops that the self-contained mills, which require about two-thirds of the pulp consumed, have an interest in the wood pulp question about twice as important as converting mills.

Wood pulp is much more vital to the existence of the self-contained mills than it is to converting mills.

Comparing the two groups within the industry on terms of what each represents as a provider of jobs for Americans it is again necessary to dig below surface statistics in order to arrive at the true proportions. The converting mills represent investment in plant and the development of direct payrolls of considerable consequence. Auxiliary employment revolving about the converting mill group is found in the manufacture of supplies and equipment and in the purveying of services, also in the collection and transportation of waste paper and rags. Also, in the case where the converting mill uses pulp of domestic manufacture the employment involved in cutting pulp timber and manufacturing it into pulp is a direct contribution to the employment possibilities for the American workman.

In the case of the self-contained mills, their value as an employer of labor and consequently as a factor in national welfare, goes beyond the direct statistics of the industry. On a comparative basis it might be shown that the converting mills show a larger number of direct employees than the self-contained mills, but such comparisons cannot be adequate. With the self-contained group the same auxiliary employment opportunities hold good—as shown for the converting group —in the auxiliary manufacture of supplies and equipment and of rendering services. But, in addition, the self-contained industry, drawing its pulp from domestic resources, provides the hub for a great cycle of jobs involved in cutting the necessary millions of cords of pulp timber, in processing the timber into pulp fibre, with the wood pulp end of the investment in turn providing a secondary hub for auxiliary industries represented in the manufacture of equipment and supplies and the rendering of services.

It is evident without elaboration that the production

of wood pulp is a primary industry which converts natural resources—which have no value in place—into useful commercial commodities, and that involved in this ramification of processing is a tremendous army of workmen. When pulp is bought abroad that army of workmen is employed abroad and is unable to contribute its substantial share to the base of consuming power in the United States.

Particularly in times of stress such as these the great national concern is to preserve for American workmen all of the employment opportunities to which they can logically lay claim. The value of the domestic wood pulp industry as an employer of labor is an item of importance in itself, but its importance as a hub for auxiliary activity and employment is greater by many many times. This very important point of auxiliary employment must not be slighted in any consideration of national welfare.

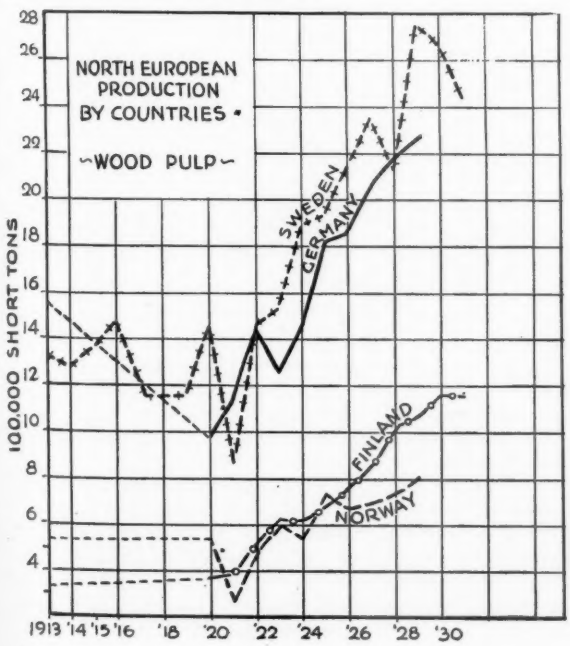
It evolves then that to purchase a ton of pulp abroad is not a matter of simply providing the American people with paper at an infinitesimal fraction of a cent cheaper per pound, but it is to throw out of gear a very important basic hub of industry which in itself provides a very substantial portion of the base of ultimate consumer demand for all commodities, including that cheaper paper.

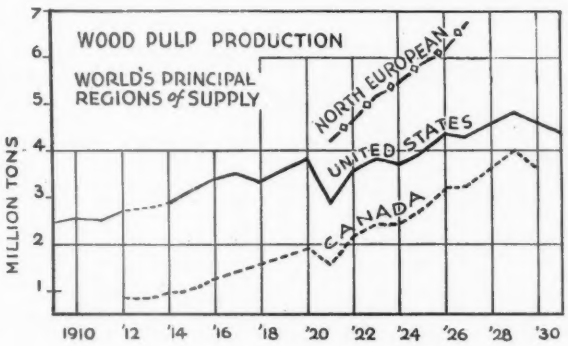
The United States is the greatest paper producing and greatest paper consuming nation in the world. It is also the world's largest importer of wood pulp and news print paper. The total consumption of paper in the United States would in no way be diminished if the total production of paper, and the raw materials entering into it, namely, wood pulp, originated entirely with domestic sources. There would, however, accrue to the United States additional employment opportunities of very large volume and extreme significance by reserving to American workmen the opportunities to produce the raw material, to manufacture the supplies and equipment necessary to fabrication, to provide the various services, and to complete the direct manufacture of pulp and paper within the country.

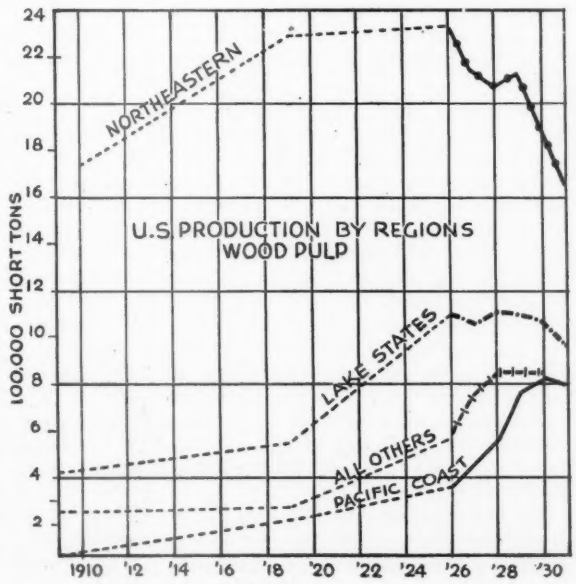
It has been contended in some quarters that the converting mills are absolutely dependent upon imported wood pulp, and further, that any restriction whatever upon the free flow of wood pulp would be ruinous to the converting mills, resulting in loss of investment and unemployment. That this is not the case is easily demonstrated. In the first place no suggestion has been advanced for completely shutting off supplies of wood pulp, altho efforts have been made to equalize the competitive situation between foreign and domestic wood pulp producers according to costs prevailing in the respective countries.

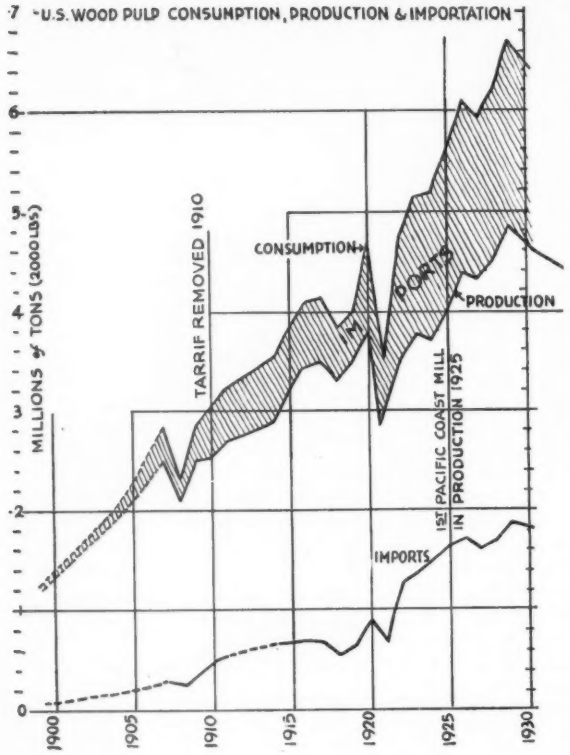
In the second place, anything which might tend to divert the purchase of pulp to domestic sources would greatly add to the total job possibilities in the United

The two lower charts are drawn to exactly the same scale and therefore afford an accurate comparison of production trends in the world's chief wood pulp producing regions. Data are for total wood pulp production in each case, and are not to be confused with pulp production solely for the competitive pulp market. Much of the production is absorbed at the source for manufacture into paper. Production in the United States is almost entirely for the domestic market, exports being negligible, but in the case of Canada and Europe the export market is all important. Further, the chief export market for these other nations is in the United States, and increases in production in them was predicated very largely on participation in the free United States market. Where data are incomplete the trends are shown.









This chart shows how imports of wood pulp have continued to increase, particularly since the removal of tariff restrictions. The rising curve of imports should be compared with the rising curves of production shown on the preceding page.

States. It would not only provide more total job opportunities but impose a minimum of disturbance on the present alignment of the domestic industry. The reasons are that domestic trade channels are well established, being more rigid in the case of finished manufactures than in the case of raw materials. The position of the paper mills is predicated largely on the factor of convenient location for quick servicing of and cheap transportation to ultimate consuming markets. On the other hand, wood pulp manufacture tends toward locations having convenient access to the principal raw material.

In a little more than 20 years the paper industry in the United States has changed materially from a position of practical self-sufficiency to one of heavy dependency upon outside sources for its wood pulp requirements. Some recently published data covering the years of 1925 to 1931 inclusive, tended to show that the imports of wood pulp have in this period held very closely to an average of 28 per cent of the total wood pulp requirements of the United States. In fact, these data show that within these recent years domestic production has tended to gain slightly at the expense of imports. These data are complete in so far as they go but they do not convey the complete picture. Any consideration of the relative position of pulp imports and domestic pulp production must go back approximately 20 years to the time when wood was placed on the free list.

By thus carrying the statistics sufficiently far to obtain the true perspective it will be seen that following the removal of a tariff barrier and with the resumption of more normal trade conditions following the end of the World War wood pulp production in both northern Europe and Canada increased at a more rapid rate than it did in the United States. In both cases the United States offered the largest and most lucrative single market and acted as a direct spur for increasing pulp production in these other nations. The effect of this increased production in other lands is readily reflected in the pulp import statistics of the United States.

In 1925 the Pacific Coast became a factor of independent pulp supply and entered the domestic market in the eastern states to compete with imported pulp. During the next six years new tonnage was added on the Pacific Coast, to be absorbed in the domestic market in competition with foreign pulp. Meanwhile during these very self same years production in the north European countries and in Canada, predicated on participation in the free American market, continued at a pace comparable to the development of new tonnage on the Pacific Coast.

Imports Hold Up

The effect of development of new domestic tonnage was to slow down the rate of increase of imports. Stated in terms of percentages domestic manufacture of the total United States wood pulp requirements increased from 70.2 per cent in 1925 to 73.2 per cent in 1931.

It should be repeated that development of pulp production on the Pacific Coast was a development of enterprise to serve domestic markets and that such development could not be classified as uneconomic in view of increasing production in the northern European countries and Canada during the same period and an attendant increase in imports from these outside sources.

The deflation of world business precipitated by the events of 1929 of course had its effect upon the wood pulp industry. Domestic wood pulp production increased consistently, except for minor variations, up to and including 1929. Meanwhile pulp imports continued to increase in relative proportion. But, the serious contraction of business and the lowered consumption of paper intensely sharpened competition in the wood pulp market. The pressure began to be felt upon American mills, but domestic production was able fairly well to hold its own until the general flight from gold precipitated by Great Britain's departure from the gold standard in the fall of 1931. The currencies of the Scandinavian nations depreciated in sympathy an average of approximately 30%, while Canada's currency depreciated less seriously but nevertheless substantially. The effect of depreciated currency was to lower the manufacturing costs of foreign producers in terms of United States gold dollars and to give to these manufacturers a competitive advantage equal to the degree of depreciated exchange.

Home Production Declines

Depreciated exchange has been much discussed. It has become a national issue. The consequences have not been fully understood. The effect upon the domestic wood pulp industry has in some cases been minimized because of failure to give full consideration to all facts.

It can be shown, for example, that the wood pulp imports in the first 12 months of the depreciated currency era have decreased by 8.7%. However, such decrease cannot be advanced as argument that depreciated exchange has had no effect upon the domestic pulp industry because, altho detailed statistics are lacking,

(Turn to page 17)

In reply to the question

Is recovery being delayed by a

HOARDING OF ORDERS?

C. H. BECKWITH
Manager, Pacific Coast Divisions
Carter, Rice & Co. Corporation

provides an interesting answer

IN THE FACE of the inability of experts to do more than offer a few causes and reasons-why of the present state of business, I certainly do not feel qualified to offer very much of use. However, I will gladly sketch an outline of my ideas on the subjects you present.

My opinion is that there is no hoarding of orders, in the sense that while orders exist, they are being held in reserve, and not released. Rather there seems to be not only a lack of ability to buy, but lately a noticeable development of a lack of desire to buy. It seems to have become the mode, universally prevalent, to curtail buying activities, even when no necessity for doing so is present. Such paralysis of buying is an epidemic carrying right on from the individual up through the industrial organization until it has become a cause of surprise at the small amount of goods a nation of people actually requires for its existence.

The potentiality of buying-power is still present, but it will not be aroused until the people of this and other nations have been restored to a confidence in their system of government, in their system of industry, in their financial structure. It is a sad reflection on the state of our advancement, and a positive denial of our progress, when there is hunger and destitution in the midst of an excess of food and goods of all kinds. Confidence thus is lost, not only by the mass of those who have felt privation, but by those—and this includes nearly every individual—who have been adversely affected by present conditions. A consequent restriction in buying-ability and buying-willingness must be expected.

In the face of present conditions, and apparently as much a cause as an effect, is the growth of the predominance of PRICE in the mind of every prospective buyer. Advertisers of all kinds, show an increasing tendency to stress the price idea, particularly the large retailers, chain groceries, and national retail distributors. Through this concerted effort to appeal to possible buyers by means of price, few staple goods carry sufficient price to meet production and distribution costs. As a consequence, depreciated buying power is increasingly felt.

Restriction of credit and stagnation of capital which is not available for even worthy enterprises, hampers recovery. Bankers and those in whose hands the nation's wealth is concentrated feel too keenly the results of unwarranted inflation and tend to be as extreme in their conservatism as they were in their unwise dispensation of credit in the inflation period. They form the largest single cause of an aggravated condition in either extremely good times or extremely bad. They are the most insistent when further expansion seems to present opportunity for profit, and the most severe when extension of credit tends to become unproductive. They tend to lead industry and individuals to dangerous extremes in either situation.

Paper, as other goods, will be consumed in direct ratio to the per capita spending ability, and the system of distribution will not change in any major respect. There is a vast potentiality of paper consumption, and should buying power be restored, as it eventually will, there is no reason why the consumption per capita should not be double that of any pervious figure.

Prices of paper are neither an important hindrance nor help to the amount consumed, generally speaking. However, the very same influence of price which I spoke of previously affects very materially the dollar value of the paper being consumed. Paper, as describing a staple, bears a resemblance to the term "food" as a staple and is subject to the same range of quality, kind, and value. With paper, the higher qualities diminish in rate of consumption in direct proportion as conditions require the buyer to seek equal utlity at less cost. While liquidation in prices does not necessarily increase the total consumption, nor the

Much has been heard about a pent-up demand, delayed consumption, hand-to-mouth buying. We asked if there was a backlog which defied release without adequate explanation. We asked if recovery was being delayed by a hoarding of orders. Mr. Beckwith has provided one interesting answer. Many others have come in. They will be presented in digest next month.

number and size of orders, the average level of quality can be improved at a generally unchanged level of dollar-value, assuming consumption remaining constant.

However, with liquidation in prices, a retarding effect on orders is more likely than an increase in orders, and the dollar-value of sales diminishes at a much higher rate than the actual decrease in demand. As general conditions improve, the process is reversed, although price expansion being met with opposition from the buyers, and the buyer having been accustomed to the use of lower grades, recovery of the dollar-value is correspondingly slower.

Signs of recovery of industry in general will be followed by the recovery of paper consumption. There will be a recognition on the part of advertisers, of the improved spending power, and the effort of the advertiser to obtain his share of the spenders' dollar will involve a multitude of uses for paper, particularly as a publicity, educating and selling medium. Such increased use of paper will in itself act as an aid in the process of recovery. I do not anticipate that a materially improved demand for paper can possibly precede general improvement in other industries, but such improvement must inevitably restore the need for paper.

While unable to forecast the day on which improvement begins, the process through which industry must go is obvious. If by proclamation or some other equally unlikely event, capital should be made available to permit all industrial plants, farms, business institutions, to undertake full operation, say next Monday, with full complement of personnel, restoration of business and abundant flow of goods would be complete in about two weeks. Should industry be able to maintain a constant spending power it would preserve itself. Such a concerted accomplishment is hardly feasible of course, but eventually progress will reach such a state.

The foregoing doubtless offers little of value and perhaps lacks sufficient specific statements. However, it shows my opinion to be that the paper industry is subject to the same illness and same influences as most other businesses, and I am sure it will recover by the same cure and find itself proportionately improved in health as a result of the same ordeal through which other industries are passing.

ROBERT W. MAYHEW

—managing director of Sidney Roofing & Paper Company, Victoria, B. C., has decided to run for municipal honors. He is a candidate for election as chief magistrate of Oak Bay, a suburb of Victoria. Recently Mr. Mayhew served on the Kidd Committee which made an investigation of British Columbia's economic problems.

OSCAR JORGENSON

—secretary of the British Columbia Pulp & Paper Company, is still in the Orient, continuing his investigaton of the pulp markets. He has decided to include Shanghai in his itinerary.

According to Lawrence W. Killam, president of B. C. Pulp & Paper, the Orient is still regarded as a promising field for business, despite fluctuations in exchange. Japan's buying has been maintained on a normal level in recent months and so far there appears to be no tendency to bring down the threatened drastic tariffs which would virtually shut out foreign pulp imports.

PUBLIC MEASURES

—designed to stabilize the basic forest situation and adjust forest use to the resource were recommended by Chief Forester Robert Y. Stuart, in the annual report of the Forest Service, U. S. Department of Agriculture, made public in November.

Highly unbalanced conditons have resulted from public policies consisting too largely of inaction and reliance upon laissez faire to find and apply the necessary correctives, the report said.

"In comparison with the need, far too little is being done to facilitate and encourage private forest management; public policies of forest acquisition and administration are still exceedingly inadequate; and public restraint of injurious private practices through regulatory requirements has barely begun," the report said.

"While policies and measures designed to promote conservation have had some effect on the balance, they have been insufficient to offset the powerful and relentless pressure of economic forces created by the pursuit of private profit. These offsetting public policies are being enlarged, but not adequately, and a demand is now developing for diminished public activities, in the name of economy and on the ground of overexpansion of governmental function.

The lumber industry, itself, in the grip of economic forces which it appraises as beyond its own power to control, is seeking public aid. It desires this for the purpose of obtaining a better balance between its output and markets and lightening the burden imposed by over-investment and over-expansion. The lumber industry realizes that if public aid having any prospect of adequacy for its effective relief is to be forthcoming, this aid must comprise measures designed not solely for the stabilization of the industry, but designed also to stabilize the basic situation and the forces which are leading on to still greater unbalance in the adjustment of forest use to the forest resource."

The basic problem, according to the Chief Forester, is one of maintaining the power of the country's forests to grow continuously the kinds and quantities of wood that our economic life will require.

"The condition of unbalanced forest areas and volumes both nationally and regionally; the overcutting of second growth; the understocking of large areas of young growth and the complete denudation of 60,000,000 acres of land because of fire and bad logging practice; the replacement of valuable species with those of no or little present usability; all these things and more find their result in marked impairment of the economic and social values which depend upon our forest resources," Major Stuart said.

"This dependence relates not only to the commodity value of forests, but also to their service in the fields of watershed protection, recreation, fish and game conservation, and scenic values."

Revised estimates, pending the completion of the nationwide forest survey now in progress, place the area of forest land in the United States suitable for the producton of commercally valuable tmber crops at 496,000,000 acres. Only three-eghths of this area, however, now bears saw timber. One-fourth bears cordwood, and the remainder ranges from fully stocked areas of young growth down to bare land. The area of forest land is increasing, but due in part to abandonment of cultivated and pasture lands, the condition of forest growth on much of it is such that it can not be counted on as a source for meeting national timber needs for many years.

STUDY OF ELECTRICAL EQUIPMENT

May Suggest Operating Economies

By R. R. BAKER, Paper Mill Engineer
Westinghouse Electric & Manufacturing Co., East Pittsburgh

THE PAPER INDUSTRY presents many opportunities for the use of electrical equipment where a large yearly return is assured through economies to be effected by the installation of such equipment.

This industry has extensive requirements for heat, usually in the form of low pressure process steam and many of the modern and progressive mills by the installation of high pressure boiler plants and either bleeder, non-condensing or condensing turbine units, designed to take full advantage of the heat drop from high to low pressure, have paid very handsome returns on the initial investment for such installation.

One large mill in the East recently installed a 7,500 kv-a. bleeder turbine designed for 600 pounds pressure, 240 degrees super-heat together with a high pressure boiler plant. This installation shows a return on the initial investment of 25%. Another mill reports a yearly savings of 200,000 after the installation of high pressure boiler equipment and a 5,000 kv-a. bleeder turbine unit.

Some 30 or more of the larger paper companies have improved their operating economies by making similar high pressure boiler and turbine installations during the past four years.

In certain mills the paper machines are driven by non-condensing variable speed turbine or engine units. These paper machines are required to operate over speed ranges as high as 12 to 1. The power requirements in operating over the range is one of approximately constant torque, however, the process steam requirements for drying the paper remains approximately constant over this range. Because of these conditions it is impossible with the variable speed engine or turbine to obtain a satisfactory heat balance.

However, a heat balance can be obtained by installing electric drive of either the single or sectional type on the paper machine and supplying D.C. power to these drives from a motor generator set. This motor generator set may be operated in conjunction with a main bleeder type turbine unit or by providing the set with an individual constant speed non-condensing coupled type turbine.

With either of these arrangements full process steam requirements for drying are passed through the turbine unit thus generating the maximum possible energy. The energy generated in excess of that required to drive the paper machine at any particular operating speed is available for the A.C. mill load.

A careful analysis made by a progressive Eastern mill before installing equipment for driving their 141-inch Fourdrinier paper machine showed a possible savings of $3,600 per year with an added investment of $7,500 for electrical equipment of this type. The decision was made in favor of the more economical electrical equipment.

After a similar analysis one of the large Middle Western mills replaced 10 of their engine-driven paper machines with 220 H.P. single motor electric drives, taking full advantage of the economies possible with electric drive and bleeder type turbine unit. Although only two examples of this type of economies are listed, many other progressive mills have taken advantage of these heat balance possibilities to modernize and improve the performance of their plants.

Sectional electric drive for paper machines in place of mechanical drive makes possible definite economies in operation. Such economies include reduced maintenance, elimination of line shafting and belting losses, and improved operating efficiency.

One Eastern mill after a careful study of the operating performance of both sectional and mechanical drive, operated side by side in their own plant, decided that the operating economies possible with sectional drive justified an expenditure of approximately $30,000 for electrical equipment to replace their mechanical drive. During the past 10 years more than 100 different operating companies located in the United States and Canada have availed themselves of the improved operating economies of sectional drive.

A number of mills operating cylinder machines have recently taken advantage of the decreased operating costs and improved performance made possible with individual motor drives applied to the cylinder moulds and primary presses of their cylinder machines. Ordinarily these sections of the machine are driven through the wet end felt, which operation materially reduces the life of the felt, decreases the finished trim and reduces the strength of the paper sheet being formed.

The first drive of this type was installed in 1928 by a progressive Western mill at an approximate increase in cost of $10,000 over the ordinary arrangement of drive. The mill is very enthusiastic about the performance of the equipment and state that the drive has been very successful and fully justifies the additional initial expenditure involved.

Since this initial installation six other similar installatons have been made all of which are showing satisfactory returns on the initial investment.

There are many other economies to be effected by the proper application of electrical equipment in the pulp and paper industry. Many mills are taking advantage of power factor correction by the installation of synchronous motors on beaters and Jordans. The application of direct coupled motors to Jordans to replace belted drives in many instances has reduced Jordan maintenance and improved the quality of production. The elimination of line shaft group drives through the introduction of individual motor drives has reduced both production and power losses in many mills. Special applications of individual drives to platers, cutters and winders has increased production and reduced operating expenses.

The trend in

DOMESTIC WOOD PULP PRODUCTION

as shown in comparing statistics for 1929 and 1931

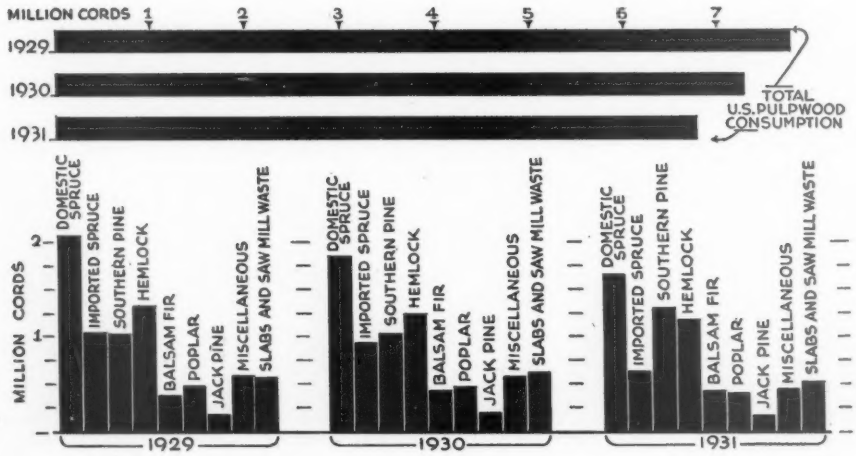
WHAT HAPPENED to the wood pulp industry in 1931 is by now history, but history not too ancient to review with profit. Without doubt, when the statistics for 1932—year of turmoil—become available, a more drastic tale will have been revealed, but there is much food for study in comparing the two years, 1929 and 1931, now made available by issuance of the Census of Manufacturers: 1931 on Pulp.

First of all it is noted that the number of establishments engaged in the business was virtually unchanged. This is in contrast to the elimination of 21 plants—about 10%—between the years 1927 and 1929. The 1932 figures on this score will no doubt show casualties.

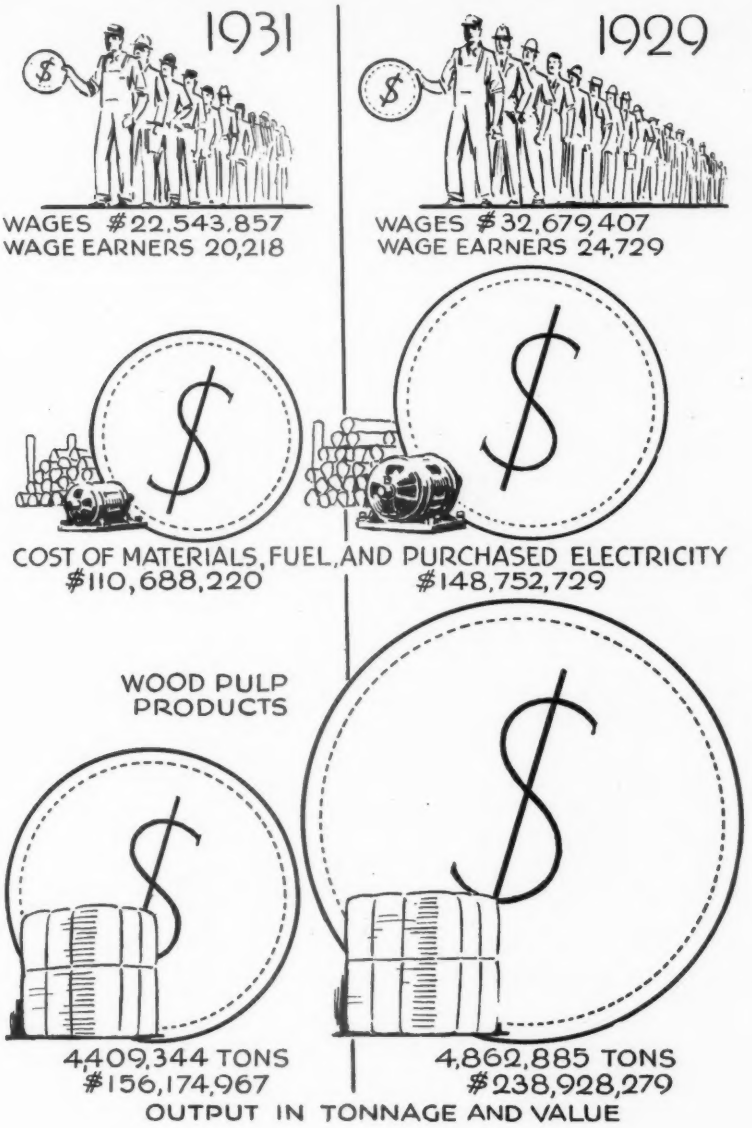
When it comes to number of wage earners employed by the industry there arises real serious food for thought. Although production of pulp declined in the two-year period by only 9.3%, the industry got along with 4,511 fewer (-18.2%) employes in the second year under comparison. This can be interpreted in part by the stringencies of the times, when every effort was bent to eliminate superfluous services and to double up on work. But one can also read into this decline in the number of wage earners the advance of manufacturing technique, a further contribution to technological unemployment by no means welcome in any consideration of national economics and social welfare. It is of course desirable to witness an increase in efficiency, but the industry can not hope to be absolved in the eventual and necessary solution of the social problems arising out of this same progress. Here, it may well develop later, is a potent omen running in advance of the shorter day and shorter work week.

What of wages? The pulp industry, it will be observed, contributed a substantial share to deflation of the national income. In 1931 the pulp industry paid out in wages $10,000,000 less (—31%) than it did in 1929. Obviously this deflation undercut the market for finished papers along with the demand for all consumable items, thereby contributing to the slowing down of business. The facts of foreign competition which imposed to great degree this necessity for deflaton are of course too well known to warrant discussion here.

The industry managed to pass on the deflation in part at least to the purveyors of materials, fuel and electric energy, but the fact that this deflation was only 25.6% as compared to the 31% deflation in wages indicates that some items making up the raw material supply were stubborn in yielding. The figures on pulpwood costs are not available in the Census, but it is of course known that pulpwood prices suffered a severe decline, due no doubt in large part to the fact that the pulpwood producer lacks organization to absorb the depression of price and consequently has to take his full measure almost immediately, whereas such items as electric energy yield much more slowly, due perhaps to the more rigid character of the suppliers and the heavy and involved investment in plant underlying the commodity. These "fixed" items will unquestionably have to take their share of the deflation eventually, but



Spruce declines in importance in the wood pulp industry while Southern pine and hemlock become proportionally more significant.



The drastic deflation in values in the domestic wood pulp industry is here shown graphically. The relative importance of the dollar is exactly as shown, for it is drawn to scale.

it can be expected only through the more leisurely process of default on securities and capital structure reorganization.

What did the industry get paid for its services? In 1929 it manufactured 4,862,885 tons of pulp having an average value of $46.30 per ton. In 1931 the industry turned out 4,409,344 tons, but the average per-ton value had dropped to $35.42. This was a decline of 30% in value. The collapse of the pulp market is well illustrated in the drastic decline in the "value added by manufacture" of 38%, a drop from $90,175,550 in 1929 to $55,870,823 in 1931.

Allowance should be made in these statements for the comparatively small tonnage of "other pulp" included in the Census. This is shown in detail in the tables accompanying this discussion.

The 1931 Census reveals some important trends in the changing sources of wood supply. Northern spruce, long the backbone of the wood pulp industry, lost a tremendous lot of ground between 1929 and 1931. This drastic decline is all the more significant in a comparison with the other important species. Southern pine made a very substantial advance. An advance in a period of general deflation means nothing other than an accentuated decline in the use of other species of woods.

Hemlock held its own quite well, but suffered a relatively slight setback. Sawmill waste, an item of little importance in the United States elsewhere than on the Pacific Coast, held even. The relative changes in wood consumption by species is portrayed more adequately in the chart accompanying the article.

When consulting that portion of the statistics referring to production of pulp by grades, other trends are noted. Here again the increasing dominance of the Southern kraft industry is shown in the larger production of sulphate pulp. Production in 1929 amounted to 910,888 tons, but increased to 1,034,291 tons in 1931. Groundwood pulp production declined in rather normal proportions considering the times, but some interesting things occured in sulphite production. Unbleached sulphite production fell off to a much greater degree

than bleached. Bleached production for the first time was greater than the production of its poorer cousin, unbleached. This is perhaps further evidence of two trends, the displacement of cheaper sulphite papers by kraft, and the raising of grades in sulphite items in the more diligent search for markets.

What will the 1932 figures reveal?

CENSUS OF MANUFACTURES: 1931—PULP

TABLE 1.—SUMMARY FOR THE INDUSTRY: 1931 AND 1929

(All items for 1931 are preliminary and subject to revision)

	1931	1929	Per cent of decrease
Number of establishments*	196	198	—1.0
Wage earners (avg. for year)[1]	20,218	24,729	—18.2
Wages[2]	$22,543,857	$32,679,407	—31.0
Cost of materials, fuel, and purchased electric energy[3]	$110,688,220	$148,752,729	—25.6
Products, total value[3]	$166,559,043	$238,928,279	—30.3
Wood pulp:			
Quantity (tons, 2,000 lbs.)	4,409,344	4,862,885	—9.3
Value	$156,174,967	$223,178,096	—30.0
Other pulp:			
Quantity (tons, 2,000 lbs.)	69,849	74,350	—6.1
Value	$8,759,273	$11,581,324	—24.4
Other products, value	$1,624,803	$4,168,859	—61.0
Value added by manufacture[3]	$55,870,823	$90,175,550	—38.0

*The 196 establishments which reported for 1931 operated 203 mills, including 5 which manufactured pulp from materials other than wood. The 198 establishments covered by the 1929 census operated 208 mills, including 3 which used materials other than wood.

[1]Not including salaried officers and employees. The average number of wage earners is based on the numbers reported for the several months of the year. This average probably exceeds somewhat the number that would have been required for the work performed if all had been continuously employed throughout the year, because of the fact that manufacturers report the number employed on or about the 15th day of each month, as shown by the payrolls, usually taking no account of the possibility that some or all of the wage earners may have been on part time or for some other reason may not actually have worked the entire month. Thus it becomes necessary to give equal weight to full-time and part-time wage earners in calculating the average, and therefore the average may overstate somewhat the mount of full-time employment. For this reason the quotient obtained by dividing the amount of wages by the average number of wage earners cannot be accepted as representing the average wage received by full-time wage earners. In making comparisons between the figures for 1931 and 1929, the possibility that the proportion of part-time employment was larger in one year than in the other should be taken into account.

[2]Manufacturers' profits cannot be calculated from the census figures because no data are collected for certain expense items, such as salaries, interest on investment, rent, depreciation, taxes, insurance, and advertising.

[3]Value of products less cost of materials, fuel, and purchased electric energy.

TABLE 2.—PULPWOOD CONSUMPTION, BY KIND AND QUALITY: 1931, 1930 AND 1929

(All items for 1931 are preliminary and subject to revision)

Kind—	Quantity (cords) 1931	1930	1929
Total	6,722,766	7,195,524	7,645,011
Spruce:			
Domestic	1,651,051	1,844,937	2,074,267
Imported	676,339	888,255	1,029,913
Yellow pine, Southern	1,294,503	1,030,273	1,036,272
Hemlock[1]	1,191,048	1,222,961	1,324,549
Balsam fir:			
Domestic	338,790	330,548	317,552
Imported	55,601	48,935	45,412
Poplar:			
Domestic	266,603	291,897	329,466
Imported	94,238	159,092	157,829
Jack pine	[2]159,273	200,970	[2]205,760
White fir, domestic	109,277	90,652	111,054
Beech, birch, and maple	69,681	68,848	76,950
Yellow poplar, domestic	73,504	107,795	129,697
Tamarack (larch)	35,433	40,054	51,835
Gum, domestic	22,440	41,825	39,685
Other woods	[3]126,942	[4]232,980	[5]153,485
Slabs and mill waste	558,043	[6]595,502	561,285

[1]Includes data for a small quantity of imported hemlock.
[2]Includes data for a small quantity of imported jack pine.
[3]Includes 142 cords of imported woods.
[4]Includes 9,390 cords of imported woods.
[5]Includes 291 cords of imported woods.
[6]Includes data for a small quantity of spent licorice root of no market value.

TABLE 3.—WOOD-PULP PRODUCTION—QUANTITY, BY PROCESS AND CONDITION: 1931, 1930, AND 1929

(All items for 1931 are preliminary and subject to revision)

Process and condition—	Quantity (tons of 2,000 pounds) 1931	1930	1929
Total	4,409,344	4,630,308	4,862,885
Mechanical, total	1,449,240	1,560,221	1,637,653
Not steamed	1,363,726	1,414,820	1,474,415
Steamed	85,514	145,401	163,238
Sulphite, total	1,416,671	1,567,063	1,688,707
Unbleached	675,859	815,897	848,754
Bleached	740,812	751,166	839,953
Sulphate, total	1,034,291	949,513	910,888
Unbleached	980,352	882,794	(1)
Bleached	53,939	66,719	(1)
Soda, unbleached and bleached	374,054	474,230	520,729
Semichemical	[2]86,628	30,213	[2]40,481
Screenings, total	48,460	49,068	64,427
Mechanical	10,115	6,611	11,459
Chemical	38,345	42,457	52,968

[1]Not shown separately to avoid disclosing production of individual establishments.
[2]Includes data for a small quantity of wood pulp not covered by the items specified.

PRESENT KNOWLEDGE

—is inadequate for establishing any complete system of characterization or specification of pulps and stuffs. That fact is well recognized in the paper industry. However, certain data relating to the subject are available, methods for pulp evaluation and analysis are at hand, and since a systematic attack seems more hopeful of progress than unorganized effort, the available material has been considered in a study entitled "A Suggested System for the Characterization of Pulps and Stuffs Based On Use Requirements," by P. K. Baird and R. H. Doughty of the Forest Products Laboratory, Madison, Wisconsin.

The conclusions, which are submitted by the authors only as a starting point, follow:

The available knowledge on the requirements of use of pulps and stuffs, as well as other paper-making materials, is still meager and empirical in nature.

Further information can be obtained in two ways:

(1) By actual use of materials and the correlation of their test values with process requirements in an empirical way;

(2) By the use of basic engineering principles and data relating various steps in paper-making processes and in those processes using paper and paper board.

Before much correlation can be done, however, it will be necessary to organize, select, or develop test methods to measure the selected properties characterizing the materials. A casual inspection of the paper industry as well as past experience at the Forest Products Laboratory shows that there is great need for many improved and new methods to express the selected properties. After having a complete set of test methods and knowledge of the relation of the test values and use requirements, the proposed system of setting up specifications can be utilized to its fullest extent either by selecting the significant properties or a full set of properties with the proper limiting values for each particular use.

TRANSCONTINENTAL

—rail rates and mixtures, coastwise application of the fourth section, need for stabilization of motor truck rates and adjustment of rail rates on raw materials for pulp and paper plants were some of the subjects to be brought up at the annual meeting of the Pacific Pulp & Paper Traffic Association in San Francisco, December 12.

It is pointed out that with prices drastically reduced on the finished product as compared to the year 1921, they are paying higher freight rates than they were eleven years ago. On raw materials prices are sharply lower than in 1921, but the plants are still paying the same rail freight rates. For example, wood is being bought about 40 per cent lower than in 1921, but the freight remains as high. Other commodities are cut in proportion but there have been practically no freight rate reductions.

INDUSTRY INVESTS IN RESEARCH

A West Coast man tells something about

THE INSTITUTE OF PAPER CHEMISTRY

By CARL WEYERHAEUSER
Weyerhaeuser Timber Co., Pulp Division

THE INSTITUTE of Paper Chemistry by this approaching February will have completed its third scholastic year. The opening day, September 21 of this year found an enrollment of 35 students. Of that number, 17 started their first year course, 10 entered the second year, and eight the third. These 35 men represent a selection from more than two hundred applications. They are graduated from 22 colleges and universities and live in 12 states.

Altho the Midwest, and particularly the East and Southeast, are the most heavily represented sections on the student roll, the Pacific Coast has sent three representatives. In the first year course is Wells Grant of Seattle, Washington, a graduate of the University of Washington. There are two advanced students from the Coast also, Carl Weyerhaeuser of Longview, Washington, a graduate of Harvard, and Walter Holzer of Portland, Oregon, a graduate of Reed College.

The Institute has at present a membership consisting of 25 concerns. Nineteen firms, mostly located in Wisconsin, were on the original list; it was thought that the project should be thoroly supported in its own territory before any widespread attempt to nationalize it was made. The adjacent territory immediately responded almost unanimously, and concurrently, concerns all over the nation endorsed and donated to the Institute. Consequently membership spread geographically East and West. The latest members to join the Institute are Congoleum-Nairn, Inc., Kearney, New Jersey; Scott Paper Company of Chester Pennsylvania; and the Pulp Division of the Weyerhaeuser Timber Company, Longview, Washington.

There are at present 20 fellowships and scholarships; two of these Staff Fellowships, one by Stein, Hall Mfg. Co. for the purpose of studying the application and uses of starch in the manufacture of paper, and the other by the Rag Content Paper Manufacturers for the purpose of studying the factors influencing the permanence of paper and pulp.

The Institute is under the guidance of a board of trustees elected by the member mills. Ernest Mahler of Kimberly-Clark, Inc., is president of the Institute. President Henry M. Wriston of Lawrence College is director and secretary; Westbrook Steele is executive secretary. On the board of trustees are Ernst Mahler, D. C. Everest, Dan K. Brown, Lewis M. Alexander, Hugh Strange, Monroe Wertheimer, and Robert B. Wolf.

The Institute is purely a graduate school and is affiliated with Lawrence College, thus enjoying the benefits of the close cooperation and experience of this old, well-established Mid-western institution. It takes the ordinary college graduate, who has fulfilled the necessary prerequisites for admission, four years of residence work at the Institute to obtain his Doctor's degree. Two years are necessary for the degree of Master of Science.

September 21 of this year saw the dedication of the new two-story Kimberly Memorial Building, just a year after the dedication of the first Institute Building. Beside housing the Institute library, the Kimberly Memorial also contains the laboratories in colloids, optics, wood technology and microscopy.

The library occupies the entire first floor and has stack rooms and various facilities in the basement. There are approximately four thousand volumes on the shelves, and over 90 periodicals are subscribed to and preserved in bound numbers. The library performs a valuable service to the industry by publishing a monthly bulletin "listing all new books and periodicals added to the library and containing titles and abstracts of articles published during the previous month in the field of pulp and paper chemistry and technology." This is supplemented occasionally by a comprehensive bibliography.

A rather unique feature of the library is the recreational reading room. This contains a collection of over 500 carefully selected books in the fields of all the liberal arts and natural sciences. These are to be read in the student's spare time. The room is a result of a belief of the Institute that purely technical men occasionally miss some of the liberal training that is necessary to good citizenship. It is hoped that the recreational library will be a medium through which students will broaden their interests, by their own initiative, in fields other than paper chemistry and technology.

The second floor of the Kimberly Memorial includes a large student laboratory for colloid chemistry with an attached laboratory for optical instruments; a laboratory in microscopy and wood technology; a suite of two research laboratories and a conference room for graduate research; the office and private laboratory of Dr. Ben Rowland, professor of colloid chemistry.

In the basement are located the laboratories and a dark room for optical studies.

The first building contains offices, a lecture room, various types of laboratories, and a complete digester room, the latter equipped with complete semi-commercial pulping equipment, including a 500-lb. Manitowoc stationary sulphite digester, a 100-lb. A. O. Smith rotary sulphate digester, and a 150-lb. Biggs rotary rag digester, acid tanks, shredder, bleacher and other equipment.

Also in this digester room are, a General Electric boiler, sufficient enough in capacity to maintain all three digesters at the same time, two Blow-Pits equipped

with Lightnin' Mixers, a stock tank, consistency regulator and flat screens, a wet machine, three small beaters varying in capacity from 5 to 15 pounds, a small commercial rod mill, a small commercial chipper, a Williams pulp testing outfit, etc.

On this same floor is a constant humidity and temperature room for accurate testing conditions, another room capable of maintaining low temperatures, and various store rooms, workshops, and equipment.

The main floor is almost entirely offices but also has a sound-proof lecture room equipped with a balopticon to facilitate and illustrate lectures with slides.

The second floor of this older building has a large and well equipped pulp testing equipment room, a spacious room housing a battery of small experimental digesters, offices, a private laboratory, a large laboratory for permanence tests, a student research laboratory, a large organic laboratory with a balance room and refrigerator for precipitation purposes, and rooms for museum purposes.

The splendid equipment of the Institute is the result of the generosity of well over 300 firms and people located all over the nation. As the director said in an annual meeting held recently: "So great has been the number, variety, and value of these gifts of equipment that it would be invidious to select a single company or even a group of companies for special mention."

"When the Institute was projected," as the Dean of the Students, Dr. Harry F. Lewis, said in a recent radio address, "three outstanding needs of the paper industry were to be stressed. These were the training of technical men, the building up of a centralized library which would contain all of the important technical journals in the various languages and would be presided over by a librarian trained in the industry and able to read the various languages, and finally the erection of a group of research laboratories equipped with the latest tools of the technologist and the physicist and chemist, where the most important problems of the industry could be studied under the group direction of specialists on the Institute staff and technical men of the Industry."

It is along these lines then that the Institute is directing its work. With a teaching staff of ten members competently trained and thoroughly experienced in their work, headed by Dr. Otto Kress, Technical Director, and Dr. Harry F. Lewis, Dean of the Students, with a library unique in its nearness to completion, located in an area where all phases of the paper industry are concentrated, making practical experience available (all Institute students must obtain a certain amount of practical experience), with a widespread support among the members of the paper and allied industries, the Institute seems to be ideally situated to carry out these purposes upon which it was projected.

EUROPEAN PULP

—producers will, by agreement, continue to operate at reduced capacity to the end of 1933. Meeting at Malmo in late October the European Sulphite Organization (Sulphite Pulp Suppliers) decided to continue pro-rated curtailment first brought about by necessities of economic pressure in 1930.

News of the meeting officially given was extremely meager, except for the general statement that production would be adjusted to consumption. It is believed that the curtailment would be applied quarterly and not be allowed to accumulate at the end of the year.

The discussions included price as well as production.

Producers of sulphite in Sweden, Finland, Norway, Germany, Czechoslovakia, Austria and Memel are parties to the S. P. S.

SPAULDING

—Pulp & Paper Company was reorganized in November under terms satisfactory to the creditors and is now in position to begin operations whenever market conditions are again favorable, it is said. The board of directors was reduced from thirteen to seven members, these being E. Fred Emery, O. M. Allison, Fentress Hill, C. K. Spaulding, H. R. Crawford, R. J. Moore and J. C. Compton.

New officers elected are J. C. Compton, president; E. Fred Emery, vice president, and O. M. Allison, secretary-treasurer.

Under the reorganization plan a bond issue of $350,000 was authorized, $250,000 of which went to creditors in exchange for their claims; $50,000 remains in the treasury and $50,000 was sold to stockholders for cash. One phase of the plan provides for 51% of the stock being placed in the hands of a board of voting trustees and this has been completed.

It is not contemplated that operations will be resumed within the near future, nor has any definite time been set for the plant to start up again.

PACIFIC COAST SUPPLY CO.

—announces that William J. McGinnis has joined their organization as sales representative, attached to the Portland and Seattle offices, calling on the pulp and paper mills of Oregon and Washington.

Through many years of association as sales manager of Valley Iron Works of Appleton, Wisconsin, and for the past five years with Smith & Valley Iron Works of Portland, Oregon, Mr. McGinnis is qualified to give the trade in Oregon and Washington a high type of service both from an engineering and practical standpoint.

W. R. Weill, manager of Pacific Coast Supply Co., has moved his headquarters from Seattle to Portland, from which location the major part of his time will be devoted to management and supervision of the business.

Pacific Coast Supply Company maintains offices at 1619 Smith Tower, Seattle, 784 Pittock Block, Portland, and 343 Sansome Street, San Francisco.

ADAM K. LUKE

—treasurer of West Virginia Pulp & Paper Co., is chairman of Paper Industries Division of Emergency Unemployment Relief Committee's campaign to raise $15,000,000 fund for the winter. Other paper men serving in this group include: E. S. Johnson, West Virginia's assistant treasurer; C. A. Gordon and R. N. Hopkins, vice president and sales manager respectively of Oxford Paper Co.; E. A. Charlton, vice president of I. P.; H. E. Atterbury, president of Atterbury Brothers Inc.; O. M. Porter, secretary-treasurer, Kraft Institute; S. C. Knode, vice president, Albemarle Paper Co.; Carlton Overton, vice president, Castleton & Overton; Major Robert L. Gray, president, Gray Envelope Manufacturing Co., and George W. Gair, chairman of the board, Robert Gair Co.

FIR-TEX

—is not woodpulp board; it is an insulating board. So decided Examiner F. J. Horan of the United States Shipping Board's bureau of regulation and traffic in a tentative report in No. 73, Fir-Tex Insulating Board Company vs. Luckenbach Steamship Co., Inc.

Complaint contended it was entitled to the 40 cents per 100-pound intercoastal rate on woodpulp board. It had been assessed a rate of 75 cents. The examiner held that the 75-cent rate was not unreasonable.

WHAT'S BEST FOR AMERICA?

(Continued from page 8)

reliable estimates indicate that domestic wood pulp production during the same period has declined in percentage at least twice as much as imports.

Comparisons of prices are also inadequate. Statistics have been presented tending to show that there was no sharp break in prices when the principal pulp producing nations abandoned the gold standard. Statistics have been advanced to show that domestic pulp prices have kept current with imported pulp prices, but this comparison ignores the fact that the domestic producers have continued in production in the bitter struggle for existence regardless of cast. Each day that such struggle continues marks by one day the approach of ultimate exhaustion and the ultimate and complete closure of the domestic mills and further serious additions to national unemployment.

Statistics have been presented to show that average prices of chemical wood pulp from gold standard countries have actually been lower than average prices of imports from depreciated currency countries. Comparisons of averages are meaningless and illogical because they proceed from the specific to the general. Comparisons to be of any value must be made by comparing like grades, and by noting the varying volumes of these grades within the comparable period. Further, it must be remembered that prices will tend to seek their lowest level and that for a time exports from gold standard countries will compete with exports from depreciated currency countries in a temporary effort to retain markets despite the costs.

The maladjustments imposed upon the world's industrial structure by the wholesale depreciation of money has set before the United States as grave a problem as the nation has ever had to face. To trust to the workings of "natural economic laws" which have not proved themselves to be laws is folly. To be concerned with trends and tendencies in other nations is superfluous. The problem of the United States lies at home and if means of correction are at hand they should be applied. Existing legislation has proven to be ineffective, cumbersome and inadequate to deal with a pressing, new and distinctly unique form of crisis. An emergency exists to be dealt with by emergency methods.

The answer must be found over and above controversy. The approach to that answer can only be:

"What is best for America?"

THE ARGUMENT

—that "when a nation goes off the gold standard prices within that country tend to rise," so much used and abused in the by now year-long discussion of depreciated exchange, gets a rather severe jolt in a learned paper originating in a nation that has gone off the gold standard, a nation that has been in prime position to benefit at the expense of the United States wood pulp industry.

Using the subtitle of "Twelve Months of Paper Currency," Prof. Bertil Ohlin discusses "Sweden's Monetary Policy" in the September number of the "Index", an authoritative document published by the Swedish Commercial Bank, Stockholm.

Prof. Ohlin views the monetary situation from the perspective. Those in the United States who have argued so long and so diligently—in the hope of perpetuating a flood of cheap pulp imports—about the operation of "natural economic laws", may be much surprised by Prof. Ohlin's frank statement that "the truth is that the Riksbank has had to take strong measures to prevent the external value of the Swedish krona from rising."

Evidence, perhaps, that "natural economic laws" are not always "natural".

The aim of the Swedish government, ever since the financial crisis which was forced upon the world with the abandonment of the gold standard by Great Britain in the Fall of 1931, has been to "preserve the internal purchasing power of the krona." And later the professor adds, in commenting on the Swedish policy of preserving a balance, that "it is a remarkable fact that so substantial a rise as over 40% in the exchange rates of gold currencies had only a very slight effect on commodity prices in Sweden."

The very firm desire of the Swedish government to prevent the shocks of the world-wide financial crisis from being thrown in full force back upon the Swedish people as a whole was apparently the motivating spirit behind the judicious injection of a bit of rubber into the Swedish krona. It was not desirable that the Swedish krona recover except as the currency of other nations recovered. The aim of the Swedish government was to preserve the stability of the krona's internal purchasing power.

It was desirable, from the Swedish point of view, to continue in force the discrepancies in exchange quotations. When, in the late Spring of 1932, the Swedish krona began to recover, the government went into action. As Prof. Ohlin puts it, "In order to prevent an undesirable . . . increase in the external value of the Swedish krona, the Riksbank again began to buy foreign exchange in large quantities."

Shortly thereafter the Swedish krona was pegged to the British Pound Sterling at Kr. 19:50, or 7½% above par. And there it has trailed along in sympathy, one Pound Sterling always being worth 19:50 Swedish Krona, altho in terms of United States gold standard dollars the krona has continued to depreciate. The only reason that it has been decided to make the Swedish Krona the tail of the Sterling kite is that that is best for the Swedish people. The practice is, however, rather convincing proof of the argument of the currency equalization proponents in the United States that the world standard of money today is not gold, but paper.

What can we expect of the future? Will things adjust themselves? Will "natural economic laws" operate? Prof. Ohlin illuminates these questions in his closing paragraph, which states in part:

"For the present the Swedish krona will remain on a paper basis and will be managed more with an eye to internal prices and general economic conditions than to the foreign exchange rates. This will of course, to quote the Minister of Finance, in no way preclude Sweden from 'cooperating fully in an international reconstruction of the world's monetary system when the time is deemed ripe for such action'."

DAMAGE BY IMPORTS

The Wall Street Journal, in a special article by Marvin S. Rathburn, states that "an increase in imports of 250 million dollars a year—which, being in payment of a cash debt, would not be balanced by an equal increase of exports—would be sufficient to wreck many of our industries. The losses resulting from increased unemployment, disappearance of profits and impairment of the general economic structure of the country would be enormous, and would mount into billions of dollars."

NEWS PRINT SANTA CLAUS

—came around November 28 and stuck $2,000,000 in the stocking of Mr. Pacific Coast Newspaper Publisher. This made Mr. Publisher all smiles. It was one of Santa's frequent trips of recent years. Two years ago base price of news print at Coast ports was $63.50 per ton. Then it was $50. Now it will be $45 beginning with 1933.

A. E. McMaster, general manager of Powell River Co., Ltd., British Columbia's 600-ton news print mill, while in California last month announced his company's new price through their Pacific Coast agents, Blake, Moffitt & Towne. The new schedule of prices looks ahead three years. During 1933 a firm price of $45 per ton will prevail. For 1934 and 1935 maximum prices of $48.50 and $52 respectively are guaranteed.

Crown Zellerbach Corporation, the other big news print producer on the West Coast, promptly met the new quotation.

The new price follows in not unexpected fashion the tumbling of news print prices in Eastern territory, although about a month late. It represents a decline in newsprint prices of about 29% since 1929. Based on present operating ratios of Pacific Coast mills the new price for 1933 will mean a reduction of nearly $2,000,000 in gross revenues.

Non-Pacific Coast competition, developing particularly within the past year under the advantage of depreciated exchange, has upset the Pacific Coast market. The imports of Scandinavian news print have increased materially, with quotations running at about $32 per ton. Some Japanese news print has also appeared recently at even lower quotations, made possible by the more than 50% decline in Japanese exchange.

International Paper Company, one of the biggest factors in the eastern field, has been shipping about 1,000 tons of news print a month to the Pacific Coast and quoting prices about two dollars less than the established figure of Powell River Company and Crown Willamette. When new contracts were being drawn up on the Coast recently International Paper offered the tempting bait of little more than $40 a ton to some newspapers, it is said.

This news print has been virtually dumped on this Coast, as it represents surplus production in International's Newfoundland mills that probably could not have been disposed of otherwise. Freight rates to this Coast from the Atlantic are so low owing to the large number of freighters coming west via Panama Canal virtually in ballast to load grain and other cargoes, that they practically offset the difference in distance. This also holds true in the case of steamships carrying Scandinavian paper from North European countries, which enjoy the additional advantage of a more than 30% average currency debasement.

The newsprint on which this issue of The News-Telegram is printed was made in Oregon.

A daily newspaper in Portland has taken to the publication of this small, but significant statement on its front page. There is a cue in this for all other daily newspapers of the Pacific Coast.

If every newspaper in the Western states would publish each day a similar notice, broadened to the limits of the Pacific Coast, the wheels of the news print mills in the West would be spinning 24 hours out of the day and every day except Sunday, and the trickle of trade dollars would in their flow pass through the tills of the newspapers also..

EASTERN CANADIAN

—newsprint companies are apparently getting closer to a settlement of their longstanding dispute over price and production and indications this month point to an early return of a more stabilized market.

Chief stumbling block to peace among the newsprint producers was Great Lakes Paper Company. Great Lakes went into receivership some time ago and has been under the wing of National Trust Company, but it has been a lively ghost in the newsprint world, out to win contracts. Now, however, Great Lakes has obtained orders for all the tonnage it can conveniently handle and has stepped out of the picture as an active bidder for new business.

This has cleared the air for the other newsprinters, most of whom appear ready to eliminate ruthless competition.

A price war would not have continued much longer in Eastern Canada for the simple reasons that very few of the companies could have stood the strain much longer. Some of the mills have been operating at less than 30% of their rated capacity and they could not be expected to go on that way indefinitely.

The consolidation program, it is stated, will be based largely on re-allocation of tonnage. Those mills with more than the average tonnage under contract will share their orders with the companies less fortunate.

This, of course, will naturally lead to considerable friction and it is reported that operators are already in disagreement about the division of business.

However, there is a growing feeling that concessions must be made all round to prevent a general breakdown of the industry. Such a happening would bring in its wake an unrestricted scramble for contracts, cutting of prices far beyond the present unprofitable level, further bankruptcy among the manufacturers, and the wiping out of millions of dollars of invested capital.

A MAJOR OBJECTIVE

—of the Seattle, Washington, Chamber of Commerce, for the coming year, approved by the Board of Trustees, is as follows:

"To protect Pacific Northwest industries against further dumping of commodities from countries with debased currencies and cheap labor, and thereby return the more than 80,000 affected workers in the Pacific Northwest to their jobs and payrolls."

With a view toward coordination of all agencies in this behalf, the Chamber has appointed a special committee consisting of Worrall Wilson, Chairman; O. D. Fisher, Miller Freeman and H. B. Friele.

The purpose is to have this special committee of the Chamber function toward unity of action at this end, while the manager of the Chamber's Washington, D. C., office, J. J. Underwood, is serving similarly at the national capital.

So that all concerned be advised in detail as to the plan under way for the attainment of this major objective, the Members' Council of the Seattle Chamber devoted the program of its noon luncheon on November 25, mainly to this subject.

FRED SIEVERS

—is now doing some work in the groundwood mill of the Camas, Washington, mill of the Crown Willamette Paper Co. Mr. Sievers was until recently with the Sidney Roofing & Paper Co., Ltd., Victoria, B. C., and prior to that time was for some years at Ocean Falls, B. C., with the Pacific Mills Ltd.

ASSETS IN WASTE

...here is a brief excursion into the pulp industry's by-products markets of tomorrow

By H. K. BENSON
University of Washington

ALTHOUGH the chemistry of the sulphite process has been studied extensively in recent years, most of the attention was given to the solid residue, pulp obtained in the reactions. It is obvious that such studies will be greatly affected by the physico-chemical variables of the process. Comparatively few analyses have been made of the composition of the wood used, or of the resulting liquor in the process. For every ton of pulp manufactured approximately 2,000 gallons of liquor containing in excess of 10% solids are produced. In some cases the discharge of this waste liquor into streams has led to serious pollution. It is evident that a more intensive study of the uses to which the liquor may be put must be made before it can become a marketable commodity. An excellent bibliography (1) of the subject has been prepared; several hundred patents covering its proposed utilization have been granted; and large sums have been expended in unreported research. In this paper it is desired to consider some of the technologic processes available for its conversion into other forms or possible useful commodities.

The action of sulfurous acid and of bisulfites on wood in pulp digester results in the hydrolysis of the hemicelluloses (pentosans) into soluble sugars and in the formation of reaction products with lignin, which are soluble in water. The general descriptive term applied to the main constituent is calcium ligno sulfonate. In reality sulfite waste liquor is a mixture of all the lime, sulfur, water, and wood, less its cellulose content, used in the process. It is evident that such a mixture varies in composition and concentration with every charge of the process and certainly with different woods or the cooking methods of differents mills.

Since our information regarding the structure of lignin is speculative it is evident that much more work needs to be done in this field before chemical derivatives can be made from it. It seems advisable, for the present, to approach the problem of the utilization of the liquor from a technologic viewpoint and to deal with general characteristics rather than with a definite chemical structure. These comprise its properties as an adhesive or binding agent, for tanning of hides, for the manufacture of alcohol, and for fuel. Its use in the agricultural industry and for the production of dyes, resins, lacquers and other chemical products is not without the range of possibility.

1. Johnsen and Hovey: Bull. 66, Forestry Branch Dept. of the Interior, Canada (1919).

Binding and Adhesive Properties

The properties which serve to bind or cause substances to adhere are perhaps best typified in the case of glue. The Greek word for glue is "kolla" and the emphasis placed upon the properties of glue has led to the far-reaching conclusions of colloid chemistry. This glue-like characteristic of sulfite waste liquor is obvious when one considers that its organic matter is composed of the non-cellulose constituents of wood such as pentosans and hexosans, resins, and lignin. Under the stresses set up by acids, high temperatures and pressure, these natural substances are converted into sugars and lignin derivatives which have certain resemblances to the simpler glue-like bodies obtained from various plant and animal organisms.

Sulfite waste liquor has been prepared under various names for use as a binder. "Zellpech" (cell pitch), lignone pitch, glutrin and bindex are some of the names given to it in commercial practice. Various methods are in use for its preparation. Its acidity is neutralized with lime and it is then evaporated to 50% solids or even to a dry powder. In both of these forms it has recently found extended use in Sweden for dust laying and road improvement, increasing rapidly in recent year. The lower half of Sweden has been made practically dustless with sulfite liquor. Three methods of application are described: (1) concentrated sulfite liquor; (2) lime method; and (3) hygroscopic method.

Sulfite liquor has been used in the United States for roadbinding purposes, chiefly in the state of New Jersey, under the name of lignin binder. The rate of application is stated at 0.6 gallon concentrated liquor (50% solids) per square yard. Definite specifications have been adopted for the purchase of lignin binders.

Linoleum Cement

It is claimed by linoleum manufacturers that the durability of linoleum is proportional to the quality of the cement used in fastening it to the surfaces which it is to cover. Some of the glues used tend to become brittle in time and others lack in adhesive properties. A cement made by incorporating a clay base and a preservative against fermentation in a concentrated sulfite liquor has been found very suitable for use in the laying of linoleum and is commercially produced for this purpose. Its successful use in this instance suggests its suitability as an adhesive for building board, plywood composition and other artificial building materials made from wood. Such an assumption does not seem unreasonable when we consider the composition

In this article Dr. Benson discusses some of the studies he made while actively associated with the National Research Council. At the Fall meeting of the Pacific Section of TAPPI, at Seattle, October 21-22, 1932, Dr. Benson presented this subject under the title "Utilization of Waste Sulfite Liquor." A digest of that presentation is published here.

of natural lumber to consist of fibers held in place in part by the adhesive qualities of lignin and the hemicelluloses.

Binder for Briquetting Coal

The use of sulfur as a constituent of a binder has been shown to have a marked effect on the combustion of a coal briquette. Sulfite liquor concentrates, due to their content of sulfur and organic matter, have a somewhat similar effect, and the modification of the properties of low grade coals when briquetted with it, is now being investigated.

As a Tanning Material

It is well known that the bark of wood used in sulfite pulping is rich in tannin content and that the wood itself contains an appreciable quantity (1%) of tannin. It is also thought that a similarity in chemical structure of lignin and some of the tannins exists, moreover, a considerable quantity of sulfite cellulose extract is now used in the manufacture of leather. However, in producing a suitable leather tanning extract from sulfite waste liquor, no attempt is made to separate the specific tannins contained in it, other than by concentration and purification. In other words, we do not know just what components in it are responsible for its usefulness in leather manufacture.

Alcohol Production

The sugar content of sulfite waste liquor arises from the hydrolysis of the pentosans and hexosans and from the limited hydrolysis of cellulose itself when sulfuric acidity occurs. The manufacture of alcohol from sulfite waste liquor has been attempted in the United States, but without commercial success.

With a large supply of cheaper sugar residues available in the United States and with the possibility of cheaper production of ethyl alcohol by synthetic processes, it does not seem very promising to utilize the dilute sugar solutions alone in sulfite waste liquor.

It is all the more interesting, however, to note the production and distribution of sulfite alcohol in Sweden. In 1930, its production was carried on in 18 mills and although sales were difficult, they nevertheless amounted to about 68% of the mills' estimated capacity (13,655,400 liters in 1930).

Fuel from Sulfite Waste Liquor

The high content of organic matter dissolved in the waste liquor has interested many investigators in its use as a fuel, and its use as a fuel is usually suggested as the simplest means of disposal. Theoretically, the organic matter contained in the liquor from one ton of pulp represents 19,820,000 B.T.U. or in a 150-ton pulp mill it would be equivalent to 100 tons of coal of 14,500 B.T.U., per day or 600 carloads per year. It is evident that a tremendous fuel value exists in this material.

Two methods are available for the separation of this organic matter from the water in which it is dissolved: (1) precipitation, and (2) evaporation. Unfortunately, both of these processes have in this country at least, been confined to pilot plants or else carried out for purposes other than for steam generation or fuel use.

Some very extensive studies to determine the cost of evaporation have been made but the recovery of solids for fuel use by this method has not become general. On the other hand, several installations made for this purpose have been abandoned. It is quite evident, therefore, that more small scale experimenaation and more attention must be given to preconcentration and to heat transfer conditions before suitable fuel values can be obtained from the organic matter in the waste liquor.

Sulfite Waste Liquor in Agriculture

Several interesting suggestions regarding the use of sulfite waste liquor in certain phases of agricultural industry have been made. One of these, if developed, might easily lead to large volume consumption, viz., the use of the organic residues for soil humus. As farm mechanization increases, organic fertilizer materials seem to diminish, leading to renewed search for methods of introducing humus to the soil. One of these is the production of peat as a desirable form of soil humus, the use of which is now quite considerable.

It cannot be said that the small amount of experimental work undertaken justifies the use of sulphite liquor either in mixed fertilizers or as a humus source, but it constitutes an interesting field of experimentation. The suitability of sulfite waste as a raw material for an agricultural spray has been probed, particularly as an emulsifying agent.

While it is true that such a use constitutes a minor demand, nevertheless its usefulness here may prove suggestive of larger uses in other fields.

Miscellaneous Uses

The color reactions of wood are numerous and apply likewise to the wood residues in sulfite waste liquor.

It is probable that chemical derivatives of the lignin and other components in sulfite waste can be used as binders for building board and as lacquer or paint materials. At least one of the paints now in commercial use for window shades is made from such material. Printing ink for newspaper use is now produced from sulfite waste liquor in Finland and Norway. In these countries a green laundry soap is also made from sulfite waste liquor.

It is obvious that dry distillation of the solids from sulfite waste liquor will yield condensable products similar to those obtained from wood itself.

In summarizing this discussion, attention must be called to the meagerness of facts, both technologic and purely scientific, that are available for any intelligent program of utilization. After conferring with many individuals interested in this phase of the industry it is my opinion that the only hope of success in utilization lies in adopting a plan of disposal suited to the locality in which a given mill is situated. At first only a small portion can be sold but eventually larger markets are bound to appear. In the meantime it is not technically unreasonable to assume that enough heat units may be obtained from burning the waste liquor to not only evaporate it but also to cook the wood that produces it as a waste product. This has not been done, but the theoretical margin is large enough so that I believe it can be done whenever serious attention is given to the problem.

EUROPEAN NEWS PRINT

—has displaced more tonnage in the Western states in proportion to population than in other sections. This is a poignant fact often lost sight of in discussing the news print situation in generalities. Examination of the facts helps materially to explain why unusually severe conditions have been imposed upon the news print industry of the Pacific Coast.

In the month of September for example, out of a total of 11,670 tons of European news print landed at United States ports, 4,114 tons, or 37%, were landed at the three California ports of San Diego, Los Angeles and San Francisco.

Assuming for the sake of argument that the eleven Western states are the logical and economical distribution territory for the Pacific Coast mills, the disproportion becomes the more evident. The eleven Western states are sparsely settled. Only 10% of the total population of the United States is sprinkled over this vast domain.

Thirty-seven per cent of the total imports of European news print saddled upon a region comprising only ten per cent of the population invokes hardship. Even the port of New York, serving a population in the immediate environs as great as that of the combined Western states, absorbed in September only 3,681 tons of European news print.

Sweden got the cream of the Pacific Coast business. That nation landed: at San Diego, 1,093 tons; at Los Angeles, 1,127 tons; at San Francisco, 1,130 tons. Norway stood next in line with 582 tons. Germany and Finland trailed along with the insignificant remainder.

Imports of European news print during the first nine months of 1932 were approximately 10% as large in volume as the imports from Canada. But, for the first nine months of 1932, Europe landed in the United States 207 tons more of news print, whereas Canadian imports declined 156,570 tons, a loss of nearly 12%. Newfoundland, in the same comparative period, suffered a loss of export business to the United States of 33,164 tons, or 29%. Here are the figures:

	September		Nine Months	
	1932	1931	1932	1931
Finland	2,849	3,865	36,779	37,183
Germany	861	1,894	11,262	16,723
Norway	2,087	61	17,254	9,828
Sweden	5,873	6,695	48,226	50,698
Other countries			1,153	35
Overseas total	11,670	12,515	114,674	114,467
Newfoundland	5,628	13,734	78,334	111,498
Canada	116,531	133,697	1,159,826	1,316,396
Grand total	133,829	159,946	1,352,834	1,542,361

The facts are obvious. European news print producers have been gaining business in the United States at the expense of North American producers. Meanwhile it should be observed that the United States in the first three-quarters of the year produced 12% less than in the comparable period of 1931.

Although it may be argued that the European news print landed at California ports is perhaps distributed over a very limited area, this cannot evade the fact that such a condition generates a most unsatisfactory competitive condition within the area and causes a generally unsettled condition all over the Western states as the displaced tonnage backs up and pressure increases on prices.

Imports of news print landed at Pacific Coast ports of the United States for the first nine months of 1932 were as follows (approximately): from Canada, 98,000 tons; from Newfoundland, 6000 tons; from Northern Europe, 27,000 tons. Total, 131,000 tons.

NEWS PRINT PRODUCTION

—in Canada during October, 1932, amounted to 157,506 tons and shipments to 157,568 tons, according to the News Print Service Bureau. Production in the United States was 76,731 tons and shipments 76,922 tons, making a total United States and Canadian news print production of 234,237 tons and shipments of 234,490 tons. During October, 20,641 tons of news print were made in Newfoundland and 1,198 tons in Mexico, so that the total North American production for the month amounted to 256,076 tons.

The Canadian mills produced 267,802 tons less in the first ten months of 1932 than in the first ten months of 1931, which was a decrease of 14%. The output in the United States was 122,601 tons or 13% less than for the first ten months of 1931, in Newfoundland 17,577 tons or 7% less, and in Mexico 2,208 tons less, making a North American decrease of 410,188 tons or 13%.

Stocks of news print paper at Canadian mills totalled 48,411 tons at the end of October and at United States mills 32,790 tons, giving a combined total of 81,201 tons compared with 81,454 tons on September 30.

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundland	Mexico	Total
1932—October	157,506	76,731	20,641	1,198	256,076
Ten Mos.	1,609,090	847,171	228,905	10,937	2,696,103
1931—Ten Mos.	1,876,892	969,772	246,482	13,145	3,106,291
1930—Ten Mos.	2,116,014	1,090,592	239,403	11,649	3,457,658
1929—Ten Mos.	2,243,582	1,160,757	212,226	15,751	3,632,316
1928—Ten Mos.	1,949,853	1,170,017	191,902	13,538	3,325,310
1927—Ten Mos.	1,710,220	1,248,822	167,434	11,853	3,138,329
1926—Ten Mos.	1,549,222	1,401,988	151,102	10,612	3,112,924
1925—Ten Mos.	1,252,902	1,263,098	71,695	10,659	2,598,354

CURTAILED NEWSPRINT

—production in an organized way in the three northern European countries seems to have failed following Finland's refusal to join the union. The Finnish newsprint industry enjoys an unusually strong position in both pulp and paper today, due to low production costs, and evidently prefers to run at full capacity at low prices rather than curtail production in the hope of better prices.

It is generally conceded in Norway, and possibly in Sweden also, that Finnish newsprint mills can be run at a profit with prices that mean certain loss in the other two countries. Pulpwood prices give the Finnish mills a tremendous advantage over Norwegian, and to a lesser degree Swedish, mills.

Reports have recently been current that pulpwood is being delivered to Finnish mills at a price of $1.00 to $1.10 per cubic meter, while in Norway wood from last season's cut is costing the mills approximately $1.75 per cubic meter. Wages in Norway are also much higher, due not only to the fact that Finnish mills employ a larger proportion of women but that wages paid male labor is much lower.

ANNUAL CONVENTION

—of the American Paper & Pulp Association, TAPPI, and affiliated organizations will be held at the Hotel Pennsylvania, New York City, February 13-16, 1933.

The association's Executive Committee has decided to hold a luncheon on Thursday of Paper Week instead of the annual banquet on Thursday night as heretofore. The Association's business meeting will be held on Thursday morning as usual.

HINDE & DAUCH

—Paper Company of Canada, Ltd., has revamped Toronto mill and now makes all general grades of boxboards.

T·R·A·D·E • T·A·L·K

of those who sell paper in the western states

+ + + +

AT DEL MONTE

—the Pacific States Paper Trade Association will again convene in annual session on May 11, 12 and 13, 1933. L. A. Colton, Zellerbach Paper Co., San Francisco, heads the committee on Program for the 1933 Convention.

Chairmen of some of the other committees are: Scientific Mark-Up Plan—Fine Paper, O. W. Mielke of Blake, Moffitt & Towne, San Francisco; Scientific Mark-Up Plan—Wrapping Paper, W. E. Taverner of Taverner & Fricke, Los Angeles; Standardization, A. W. Towne of Blake, Moffitt & Towne, San Francisco; Membership, F. E. Jeffries of Tacoma Paper & Stationery Co., Tacoma; Finance, F. M. Couch of Blake, Moffitt & Towne, Los Angeles; Trade Relations (fine and wrapping papers) H. L. Zellerbach, Zellerbach Paper Co., San Francisco; Credit Clearing, T. A. O'Keefe, Pacific Coast Paper Co., San Francisco.

E. A. McGRATH

—has been appointed Eastern representative for the Hawley Pulp & Paper Co., manufacturers of news print and wrapping papers, Oregon City, Oregon. Mr. McGrath will have his headquarters in New York City. He has been in the paper business for a number of years.

"His past experience and the friendships he enjoys in the trade," President Felix Pagenstecher stated at the time of making the announcement, "will, we believe, result in an agreeable and beneficial service to the Hawley company's Eastern customers."

NEW CONVERTING PLANT

—recently placed in operation in Los Angeles by the National Card, Mat & Board Company of California, 11422 South Broadway, is affiliated with the Chicago company of similar name and the Card & Paper Works, Ltd., of Petersborough, Canada, both of which have been in operation for more than 20 years.

The plant started operations early in November. It is a duplicate of the Chicago plant, modernly equipped. It will produce plain and fancy cardboards for show cards, the printing trade, engravers, mat boards for pictures, etc., mounting boards, advertising display material, artists' board, etc. They are also equipped to do lithographic mounting and finishing for the printing trade.

C. H. Crysler of Chicago came to the Coast when the plant was placed in operation, remaining for some weeks before leaving for the east again. C. W. Crysler remains in active charge of the company as first vice president. C. Urquhart is vice president, and spends a good part of his time in Los Angeles. J. H. Crysler is secretary.

Giving reasons for establishing a plant on the Coast, C. W. Crysler said, "We have faith in the future development of the Pacific Coast, and in the return of better times. We have been doing business out here from our Chicago plant for the last 20 years, and we now feel that we can render better service by having a plant located in this territory."

Their products were formerly handled exclusively by Blake, Moffitt & Towne, but since the opening of the Los Angeles converting plant, sales will be made through all jobbers. The entire Coast territory will be served, and in addition they are developing an export business in the Far East.

While some of the experienced and skilled labor was brought out from the east, California labor is being employed in the plant as far as possible, and western raw materials are chiefly used. The firm is incorporated in California, with $75,000 capitalization.

The plant itself has about 20,000 square feet of floor area, and is exceptionally well lighted. There are four different types of pasting machines, a drying machine, hand sheer machine, lithographic mounting machine, embosser, power cutting machine, and various other smaller mechanical units.

PAPER MEN

—from other parts come to Los Angeles during the past month to visit the paper merchants, but the volume seemed to be a little reduced.

Allen Engle, president of the Pacific Waxed Paper Co., Seattle, appeared on the scene early in December to visit his local representative, Charles Brouse, and was observed at the stadium giving his support to the Washington Huskies when they trampled the U. C. L. A. football team. Incidentally, business kept him over until after the U. S. C.-Notre Dame game the following week.

Isaac W. Carpenter, president of the Carpenter Paper Co. of Omaha, Neb., spent a few days in Los Angeles with H. F. Field.

A. E. McMaster, general manager, and Robert Bell-Irving, assistant general manager of the Powell River Co., B. C., news print operators, spent a few days in Los Angeles visiting publishers.

Wm. McCormick of the American Writing Paper Co. of Holyoke, Mass., arrived December 5 from San Francisco, where he makes his headquarters as Pacific Coast representative.

George W. Houk of the Hawley Pulp & Paper Co. spent the first week of December in San Francisco and the second in Los Angeles, then returning to Oregon City. He has been getting down every five or six weeks recently.

TOM JONES

—of the Harding, Jones Paper Co., Middletown, Ohio, was a recent California visitor and while in San Francisco was taken around by Ben Levison, paper mill representative. Mr. Jones is a brother of Howard Jones, coach of the University of Southern California football team.

ZELLERBACH PAPER CO.

—managers held their twenty-fourth convention at the headquarters offices in San Francisco on December 11-14 inclusive. On Sunday there were two general sessions. On Monday an executive and general session. Tuesday and Wednesday were given over to three sessions each on standardization.

STONER PAPER CO.

—a new concern, has recently been opened in Los Angeles at 600 East 12th St. N. E. Stoll is owner of the concern, and associated with him is Frank E. Ratner as sales manager.

Offices were opened December 1, and complete stocks were expected to be on hand by the first of the year. Their major business will be in fine papers, and for this reason they are located close to the center of the printing plant area.

The firm will operate on a cash and carry basis. They will specialize in handling over-runs, job lots, etc. from the mills.

PACIFIC MILLS, LTD.

—new converting plant unit at Vancouver, B. C., will swing into operation about the first of February, according to Frank N. Youngman, vice-president of the company. The new unit will be devoted chiefly to the manufacture of solid fibre board for packing commodities such as canned salmon, sugar and dairy products.

The building which will house the plant has been practically completed, and most of the machinery has arrived, ready for installation. The program represents an investment of about $250,000.

Pacific Mills, Ltd., at Ocean Falls is now operating on the basis of eighteen days a month.

VICTOR E. HECHT

—vice president of Zellerbach Paper Company, with headquarters at San Francisco, recently talked on advertising before the Portland Advertising Club. He emphasized the need for quality selling and for creating new desires.

LOS ANGELES PAPER TRADE

—continues to show slight improvement, altho not to the extent expected. Ordinarily the holiday season means a larger increase than has been noted in Southern California during the past month or two.

December is always a slow month, buyers having ceased to place orders, in an effort to keep down inventories. The mills with warehouse stocks are getting some business, but during this month those shipping in from the mill are doing comparatively little.

The majority of the jobbers, however, seem to feel that general conditions for them are looking up, and expect a much improved demand in the Spring. Salesmen report rising optimism in the smaller towns. The Los Angeles Clearing House Association recently eased bank interest rates. This move, among other factors, is expected to put more money into circulation with the start of the new year.

News print prices dropped $5.00 to $45.00 f. o. b. Wilmington.

Bag prices went up 5% the first of November and became effective about December 1 when orders began to be placed on the new price scale. There have been few advance orders recently, but jobbers have been able to raise their resale price a little. The price increase is being adhered to only by the Coast mills, the Eastern companies still selling at the previous figures. Los Angeles, particularly, represents an attractive volume area for disposing of excess stocks, which handicaps the trade in endeavoring to stabilize conditions.

Wrapping paper prices remain the same, but there has been a slight upward adjustment of jobbing prices to the trade.

The 1000-sheet rolls of toilet paper, 4½-inch, have advanced approximately 10% in price in Southern California. The advance has been confined to the southern part of the state, this area having had lower prices than the rest of the Coast. The price increase brings all sections to a more uniform price level, altho it is still low.

Paper towels, napkins, etc. remain at the same prices that have been in effect during the earlier part of the year.

On December 15, the Los Angeles Harbor department put into effect a handling charge of 30c per ton on all intercoastal and foreign cargoes, both inbound and outbound, but it probably will not be effective until January 1. This is because mechanics of the intercoastal and trans-Pacific freight tariffs are so involved.

The surcharge will be levied against all freight coming to rest on the dock, but not on commodities transferred directly from the ship's hold to cars by ship's tackle. This new handling charge, the first against intercoastal cargoes at this port since 1921, is declared necessary because of increased port charges by the harbor department.

The paper trade follows closely the general business trend in Southern California, which has been holding fairly constant during a period when seasonal decline may be expected. Factory employment has declined slightly less than the usual seasonal drop. Printing and paper industries reflected decreases.

California crops have been good, but the markets weak. Lack of rain has delayed fall planting operations. Some farm prices show continued improvement. Citrus fruit crops have been ample, but have found low prices.

General construction contracts increased sharply in November, totaling over $38,000,000, including such projects as the $446,410 Los Angeles-Long Beach breakwater, the $10,000,000 San Gabriel Dam No. 1 for the Los Angeles Flood Control, indicating huge expenditures of funds, public and private, which will improve Southern California business conditions, and react favorable on the paper trade.

SALES OF JAPANESE PAPER

—first eight months of 1932 were 433,816 tons. In 1931, 433,471 tons, same period, according to figures compiled by the Japanese Paper Manufacturers' Association.

Production, first eight months of 1932 was 431,709 tons. In 1931, 466,893 tons.

August production of paper was 54,717 short tons; sales 54,130 short tons.

SWEDISH MILL LABOR

—has extended its wage agreements with the employers. Agreement of last March between the Paper Mill Federation of Sweden and the Federation of Swedish Paper Industry Workers will remain in force to February 1, 1933, and will be automatically extended one year unless either party gives notice before December 1, 1932.

The labor agreement in the pulp industry has been extended until February 1, 1934.

Don't Let

ruin your economy program

With the arrival of cold weather, some mills will reach the end of the savings in operating costs that they had secured during the past summer. Savings that are still needed — must they be swallowed up now by the added cost for extra steam? Not where there still exists the opportunity to utilize heat that is now being wasted. It is entirely possible for such mills to maintain regular heating efficiency with greatly reduced consumption of steam, thus preventing excessive steam costs from ruining their economy program. Look into the possibilities. Our engineering staff will gladly make recommendations for your particular situation. Let our experience help you to save money.

Heating, Ventilating, Drying Equipment

Briner Economizers—Vapor Absorption Systems—Grewin High Pressure Ventilation—Grinder Exhaust Systems—Machine Room Systems—Hoods Ducts—Blowers—Fans—Unit Heaters. Descriptive Literature will be sent on Request. Write our office nearest you.

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201 North Wells Street, CHICAGO — Main Office—122 E. 42nd Street, NEW YORK — 414 Lewis Bldg., PORTLAND, ORE.

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When writing to J. O. ROSS ENGR. CORP. *please mention* PACIFIC PULP & PAPER INDUSTRY

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+ be careful – first, last, always

•●•

"Since Edison's discovery of the incandescent lamp half a century ago, the entire trend of civilized existence has been toward acceleration.

"This of course means that we have tremendously increased not only the speed of transportation of people and material but also the tempo of production, through the perfection of machinery and the elimination of unnecessary physical effort.

"But—has the speed of *human* reaction been increased in direct proportion? Has the human mind been geared to respond accurately to these changing physical conditions which have introduced all the new and complicated hazards confronting us today?

"Undoubtedly in the course of evolution, nature, in its slow, methodical, but intensely accurate manner, would solve the problem eventually. But before this could happen countless lives would be sacrificed and human suffering multiplied many times, to a point indeed frightful to contemplate, were it not for the sound thought and intensive effort with which the safety man of today is attacking the problem.

"Our ambitions and struggles since the National Safety Council was organized have been directed toward the coordination of these human factors with the increased pace of existence.

"While we cannot turn our backs on the more or less distant future and the problems it may bring, we must, under present economic conditions, first direct our energies toward holding the ground already gained.

"In most sincere appreciation of the great honor you have conferred upon me, let me pledge you, in the words of Carlyle: 'Our main business is not to see what lies dimly at a distance; but to do what clearly lies at hand'."

Taken from the acceptance speech of Mr. J. I. Banash, Consulting Engineer, Chicago, upon his election as president of the NATIONAL SAFETY COUNCIL, at the twenty-first Annual Safety Congress, Washington, D. C., October 5, 1932.

PULP AND PAPER MILLS IN THE STATE OF WASHINGTON

Statement of Accident Experience for October, 1932

Company—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Washington Pulp & Paper Corp., Port Angeles	31,144	0	0	0	0	1
Puget Sound Pulp & Timber Co., Bellingham	28,592	0	0	0	0	2
National Paper Products Co., Port Townsend	66,205	1	15.1	63	.951	3
Columbia River Paper Mills, Vancouver	55,274	1	18.1	12	.217	4
Rainier Pulp & Paper Co., Shelton	54,061	1	18.4	19	.351	5
Longview Fibre Co., Longview	101,532	2	19.7	17	.167	6
Grays Harbor Pulp & Paper Co., Hoquiam	41,604	1	24.1	9	.216	7
Everett Pulp & Paper Co., Everett	61,512	2	32.5	31	.504	8
Fibreboard Products Inc., Sumner	28,588	1	35.0	14	.490	9
Crown Willamette Paper Co., Camas	213,766	8	37.4	118	.552	10
Inland Empire Paper Co., Millwood	45,737	2	43.7	50	1.093	11
Weyerhaeuser Timber Co., Longview	33,184	2	60.3	84	2.531	12
Puget Sound Pulp & Timber Co., Everett	45,440	4	88.0	68	1.496	13
Fibreboard Products Inc., Port Angeles	18,904	2	105.8	19	1.005	14

The following mills did not report—Pacific Straw Paper & Board Co., Longview; Pacific Coast Paper Mills, Bellingham.
The following mills were not in operation—Everett Pulp & Paper Co. (West Tacoma Plant); Tumwater Paper Mills; St. Regis Kraft Co.; Puget Sound Pulp & Timber Co., Anacortes; Shaffer Box Co.

PUT YOUR FAITH IN

GOODYEAR EQUIPMENT

Throughout the paper industry, Goodyear Mechanical Rubber Goods bear an exceptionally good reputation for efficient, economical service.

This is because Goodyear has designed this equipment particularly to meet the needs of this industry's operating conditions and processes.

Take, for example, the belt Goodyear builds for your hard drive duty — Goodyear THOR Belt, seamless*, for your beaters, Jordans, pumps, cone-pulleys and chippers.

THOR does wonders on these jobs because it's built to handle them:

No center seam to open under flexing strain;

Edges envelope-protected against fray;

Body of heavy silver duck, strong at the fasteners and cushioned and buttressed in Goodyear Rubber.

BELTS
MOLDED GOODS
HOSE
PACKING

Other Goodyear Mechanical Rubber Goods for paper mill service are likewise carefully designed and built for your purposes — Goodyear Soft-Nozzle Sanitary Hose, for example — and likewise accurately specified to your requirements by the G.T.M. — Goodyear Technical Man.

Goodyear now offers the latest tested Goodyear development for the paper industry: GOODYEAR RUBBER ROLLERS FOR PAPER MILL USE.

Why not talk over these new Goodyear developments in the light of your plant requirements or problems with the G. T. M.? A word to Goodyear, Akron, Ohio, or Los Angeles, California, will bring him.

**Goodyear THOR Belting, seamless, is made in widths up to and including 16"—THOR quality of special construction is available for larger sizes.*

THE GREATEST NAME IN RUBBER

GOODYEAR

WOOD PULP PRICES

—were weaker again as December opened. Large pulp stocks abroad, the influx of large foreign tonnage just ahead of the closing of the water shipping season, the uncertainty of the market, a limited consumption, and a desire to keep mill stock low against inventory, all acted to further depress prices already terribly weak.

Prime bleached sulphite sales have been reported as low as $35 per ton ex-dock Atlantic Coast, but secrecy surrounds such sales. Strong unbleached sulphite sold for $25 and $26 per ton, with the half prime grades moving at $24. Open quotations, however, have been slightly above these figures. Meanwhile good quality foreign kraft pulp is reported at $25 per ton.

The outlook for a strengthening in price is not bright at this time.

THE NASHWAAK MILL

—after two years of idleness is again in operation. It was formerly known as the Port Royal Paper & Pulp Co., and was controlled by the American interests of the Oxford Paper Co. The mill, located at St. John, New Brunswick, has a daily capacity of 100 tons of bleached sulphite pulp.

CANADA'S PULP EXPORTS

—made a gain in October. The Canadian Department of Trade and Commerce reported that in October total exports of all grades were 47,207 tons, valued at $1,791,329, against 31,636 tons of a value of $1,372,728 in September last, and 57,020 tons of a value of $2,644,278 in October, 1931.

Exports to the United States in October were 34,438 tons, valued at $1,400,576, while exports to the United Kingdom were 9,497 tons of a value of $247,161, and to all other countries 3,275 tons of a value of $143,592.

Exports of bleached sulphite in October totaled 18,928 tons, contrasted with 24,490 tons in the same month last year, while unbleached sulphite exports were 3,696 ton, against 12,117 tons in October, 1931. Exports of kraft pulp were 4,468 tons, against 5,827 tons last year, and mechanical pulp exports totaled 19,651 tons, compared with 12,978 tons a year ago.

However, exportations of pulp from Canada this year are running well below those of a year ago. During the 12 months ended with October last, exports of pulp of all kinds, including chemical and mechanical, from Canada totaled 475,616 tons, valued at $20,819,580, representing a sharp decrease compared with 634,639 tons of a value of $30,763,769 exported in the previous 12 months. The decline in Canadian exports, calculated on the 12 months' figures, is equivalent to not quite 22 per cent.

THE JAPANESE PAPER INDUSTRY

September—1932 (in lbs.)

	Production	Sales
Printing Paper, Superior Quality	10,161,690	12,728,930
Printing Paper, Ordinary Quality	10,701,426	11,215,200
Drawing Paper	3,113,885	3,584,840
Simili Paper	9,242,673	10,299,333
Art Paper	1,088,005	1,509,881
News Printing Paper	45,644,779	50,743,902
Sulphite Paper	5,387,220	5,838,628
Colored Paper	1,406,261	1,770,215
Wrapping Paper	12,612,079	16,744,755
Japanese Paper	1,283,562	3,047,324
Board Paper	6,748,708	6,635,478
Miscellaneous	3,442,094	4,337,886
Total	110,832,382	128,456,372

PRICE BROTHERS

—of Quebec for first seven months of fiscal year show loss of $429,000. Depreciation or depletion are without provision. Sinking fund not provided for is $491,000. Current assets at September 30 were $5,985,000, less by $327,000 than current liabilities of $6,313,000.

TOMAHAWK

—Kraft Paper Co. and Mosinee Paper Mills Co., two Wisconsin mills, are proceeding with merger. Plan is new organization to acquire all assets of old companies an exchange of securities on lower basis.

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES

OCTOBER, 1932

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision.)

PULP WOOD

	Rough				Peeled				Rossed			
	Spruce		Other		Spruce		Other		Spruce		Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
Sov. Rus. in Eur.	.....	.....	.....	.....	6,291	67,626	.....	.....	.....	.....	.....	.....
Canada	8,761	74,359	.....	.....	45,409	410,654	8,478	55,504	77	909	.....	.....
Total	8,761	74,359	.....	.....	51,700	478,280	8,478	55,504	77	909	.....	.....

Total Imports of Pulpwood, October, 1932—69,016 Cords; $609,052.

WOOD PULP

	Mechanically Unbleached		Ground Bleached		Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
Austria	109	1,611	.....	.....	.....	.....	80	2,979	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	.....	.....	.....	831	30,176	1,742	65,688	.....	.....	.....	.....	.....	.....
Estonia	.....	.....	.....	.....	2,086	53,487	.....	.....	.....	.....	.....	.....	.....	.....
Finland	2,436	42,613	350	6,481	7,984	259,239	657	25,355	2,034	62,383	54	1,743	.....	.....
Germany	.....	.....	.....	.....	3,042	112,087	1,779	82,002	.....	.....	.....	.....	.....	.....
Latvia	.....	.....	.....	.....	50	1,084	.....	.....	.....	.....	.....	.....	.....	.....
Lithuania	.....	.....	.....	.....	266	6,875	.....	.....	.....	.....	.....	.....	.....	.....
Norway	100	1,410	125	3,057	3,139	101,181	10,054	413,307	2,551	64,012	.....	.....	.....	.....
Poland and Danzig	.....	.....	.....	.....	.....	.....	50	1,800	356	6,597	.....	.....	.....	.....
Sweden	275	4,928	599	8,255	23,565	713,805	4,404	167,415	19,832	600,242	25	1,013	.....	.....
Canada	9,790	179,264	2,177	26,455	3,203	103,890	14,915	799,265	1,982	100,118	1,956	174,016	160	6,341
Total	12,710	229,826	3,251	44,248	44,166	1,381,824	33,681	1,557,811	26,755	833,352	2,035	176,772	160	6,341

Total Imports of Wood Pulp, All Grades, October, 1932—122,758 Tons; $4,230,174.

NO IMPROVEMENT

—in the condition of the Pacific Northwest paper industry has been registered in the past two or three months, said C. B. Richards, traffic manager of Hawley Pulp & Paper Company, in his report to the twenty-third regular meeting of the Pacific Northwest Advisory Board at Portland December 9, in his capacity as chairman of the paper, paper products and pulp committee.

"The period from December 1 to March 1," he continued, "is usually one of quiet activity, due to the fact that inventories are allowed to become depleted and only such orders placed for new material as will take care of immediate requirements.

"The feeling is general, however, among the mills and the trade that March 1 will probably see considerable revival in the paper industry and that many of the mills which are now operating on a shortened schedule will no doubt be able to increase their production.

"There is still a very heavy movement by truck from the various mills, which is affecting the carloadings, and it is hoped that some regulation will be enacted which will allow the rail lines more freedom in competing with the truck lines.

"Reports received from the district chairmen of this committee indicate a decrease of 13.4% in the prospective loadings for the first period of 1933 as compared with the actual loadings for the same period of 1932.

"The following shows the actual and prospective loadings for the first quarter of 1933 and the corresponding quarter of 1932.

	Actual Loadings 1932	Prospective Loadings 1933
January	488	423
February	464	402
March	522	452
	1474	1277

LINK-BELT CO.

—announce a roller chain to be known by the trade-name Link-Belt Silverlink. Although the chain is not made up with silver links, its side bars are especially treated to assst in resisting corrosion, and this treatment gives them the appearance of silver.

Silverlink roller chain is made in all sizes from ⅜" to 2½" pitch, and in single or multiple widths. It is available with wheels, for any horsepower, also with conveying attachment links in wide variety; and complete drives are carried in stock by distributors in sizes up to 225 H.P., in speed ratios of 1 to 1 up to 8 to 1.

PORT ALICE

—and Woodfibre mills of the B. C. Pulp & Paper Company both are now in operation after several months' shutdown, but the duration of their present period of activity is uncertain, according to President L. W. Killam.

Alex Duncan, Portland manager of Paper Makers Chemical Company, does not expect to get home much before Christmas. He left in late November for Kalamazoo, Michigan.

Charles McKillop, Portland manager for Graham Paper Company, recently went East on a two weeks' trip to the St. Louis office.

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TIMELY SERVICE

To obtain a color match in the mill requires practical skill.

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To select those dyes most economical and suitable for a particular sheet requires a thorough knowledge of both dyes and stocks.

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We welcome these color problems.

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National Aniline & Chemical Company, Inc.

40 Rector Street, New York, N. Y.

Boston Providence Chicago Philadelphia
Charlotte San Francisco Toronto

PAPER DYES

CROWN ZELLERBACH

—Corporation and subsidiaries, for the quarter ended October 31, 1932, report net profit of $41,317, after depreciation, depletion, interest, United States and Canadian income taxes and minority interest, equal to 16 cents a share on 250,601 outstanding shares of combined series A and series B preference stock. Net loss in the preceding quarter was $5,406.

For the six months ended October 31, 1932, first six months of the corporation's fiscal year, consolidated net profit was $35,911, or 14 cents a share, on the series A and B preference issues. This compares with net profit of $1,193,078 earned in the six months ended October 31, 1931, equal to $4.76 a share on the 250,601 preference shares. After preference dividend requirements of $751,803 for the period, net available to the common stock for the six months ended October 31 last year was equal to 22 cents a share on the 1,992,680 outstanding shares.

The statements reported exclude profits realized through purchase of the company's own bonds for redemption, both in 1932 and in 1931.

Crown Willamette Paper Co., whose common stock is entirely owned by Crown Zellerbach Corporation, reports consolidated net profit of $127,006 for the quarter ended October 31, 1932, equal to 63 cents a share on 200,000 shares of $7 cumulative first preferred stock outstanding. In the preceding quarter net was $279,476, equal to $1.29 a share on the same number of $7 first preferred shares.

For the six months ended October 31, 1932, first six months of the company's fiscal year, Crown Willamette and subsidiaries, including Pacific Mills, Ltd., report consolidated net profit of $406,482, after depreciation, depletion, interest, United States and Canadian income taxes and minority interest, equal to $2.03 a share on the 200,000 outstanding shares of first preferred stock. In the corresponding six months period of 1931, net profit amounted to $1,604,513, equal to $8.02 a share on the first preferred shares.

As in the case of the parent company, the Crown Willamette showings for 1932 and 1931 exclude profits realized on bonds purchased for redemption.

HAWLEY PULP

—& Paper Company has been running its ground wood mill on the island in the river continuously since high water started November 7 and plans to continue operation until the water slackens.

Under the old power contract a great deal of surplus pulp was piled up as it called for a heavy power consumption and therefore the plant made pulp through the low water months as well as through the high. Under the new contract, the plant stipulated month by month for as much or as little electric energy as it needs, so that it is not necessary to run on pulp during the low water months in order to utilize all the power paid for. Thus the plant can figure on using up the high water months' surplus production through the rest of the year.

FRASER COMPANIES

—of Edmunston, New Brunswick, are authorized to create $2,000,000 prior lien bonds, outranking first mortgage bonds which have authorization for increase from $10,000,000 to $15,000,000. Shareholders have passed by-law giving directors blanket authority on reorganization.

The Care of FELTS

Felt seams should be ctraight across the machine. There is seldom any excuse for having them otherwise. When a felt is not started properly a strain develops which shortens the life of the felt.

Failure to raise the rolls when the machine is down for any length of time is hard on the felt.

Under the most favorable conditions, felt life is none too long, because of the severe type of service felts perform . . . all the more reason for insisting that all felts be properly adjusted to the machine.

Endless felts up to 86 feet in length. Top and bottom felts. Dryer felts. Every required weave, width and size used in the manufacture of paper.

Pacific Coast Representative: GEO. S. MEDDIS
1650 No. Point St., San Francisco, Calif.

The Orr Felt & Blanket Co.
Piqua, Ohio

JAPAN'S PULP IMPORTS

—in September, 1932, were as follows: from Canada, 2,398,400 lbs.; from Norway, 155,867 lbs.; from U. S. A., 4,959,600 lbs.; from Sweden, 692,667 lbs.; from Germany, 1,016,400 lbs.; from Switzerland, 117,600 lbs.; from France, 118,133 lbs.; from Europe, 461,200 lbs.; total, 9,919,867 lbs.

W. D. SHANNON

—nationally recognized for his many engineering achievements in the Northwest while Pacific Coast general superintendent and Northwestern manager for Stone & Webster Engineering Corporation, has entered private business in his profession and has associated with him four former Stone & Webster men in the Shannon Engineering Company, Henry Building, Seattle, Washington.

Recently the Reconstruction Finance Corporation named Mr. Shannon as a member of its advisory board to work in connection with the corporation's loan agencies on applications for loans on self-liquidating construction projects.

One of the latest outstanding engineering projects which Mr. Shannon brought into being is the $13,000,000 Rock Island hydro-electric development and dam across the Columbia river near Wenatchee. This is the first time the Columbia has been harnessed by man and its accomplishment, in considerably less than the time allowed, has proclaimed the engineering and construction capabilities of this engineer throughout the nation. The Rock Island hydro-electric development has an ultimate capacity of 252,000 horsepower of electric energy.

The Shannon Engineering Corporation is composed entirely of men formerly high in the Northwest's engineering activities of Stone & Webster. W. L. Richardson is the structural engineer largely responsible for the structural designs of the company's projects in the Pacific Northwest. W. K. Sanders was mechanical engineer with Stone & Webster for many years; O. P. Seim was structural engineering assistant to Mr. Richardson, and O. A. Demuth was electrical engineer.

With the unusual engineering skill assembled in one company this organization is equipped to handle any industrial project from the design and construction of the building and its mechanical and electrical equipment to creation of a great hydro-electric development.

CONTROLLING INTEREST

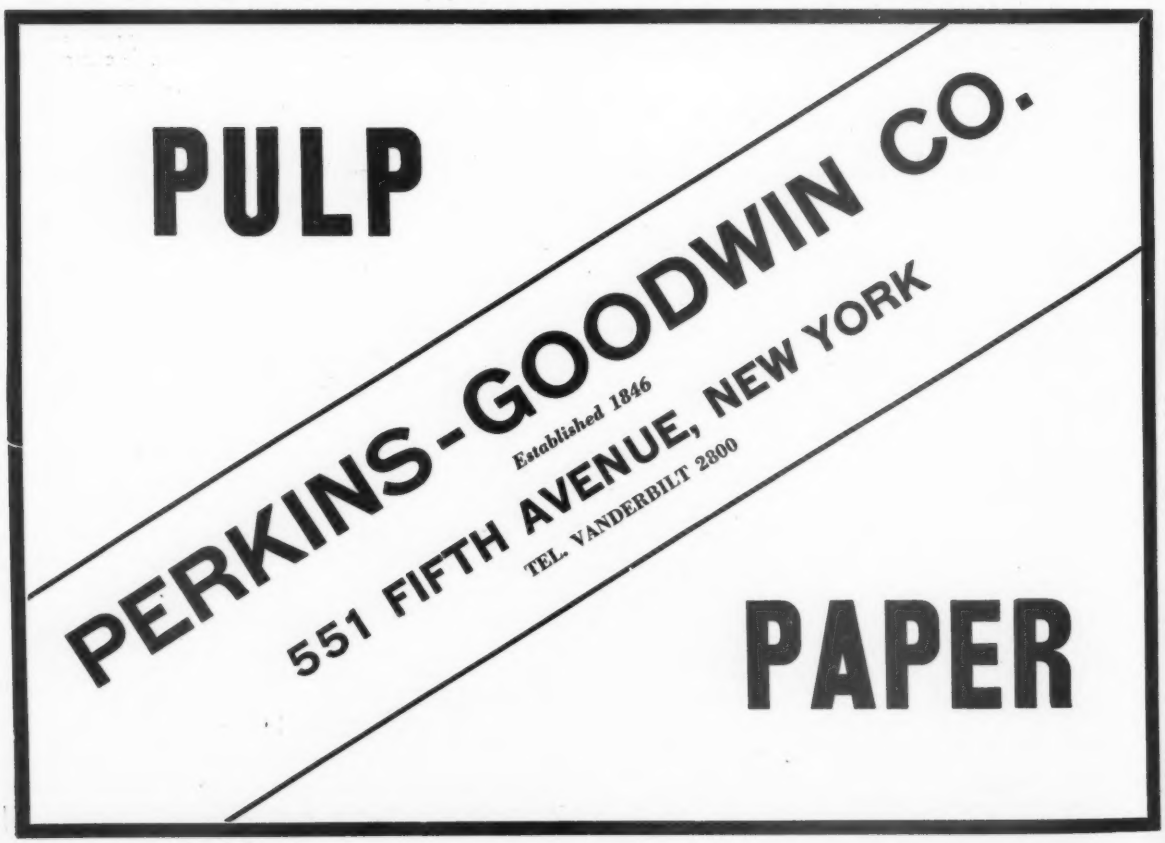
—in Pacific States Pulp & Paper Company with properties at Aberdeen, Washington, and at Priest River, Idaho, in addition to a number of mineral lakes in the northern part of Washington, has been acquired by Joseph Gengler, of Western Cooperage Company, and a number of his friends. Mr. Gengler, for many years an operator of his own cooperage mills, became an officer of Western Cooperage Company when he sold out to that concern and is in charge of the Seattle office of the firm at present.

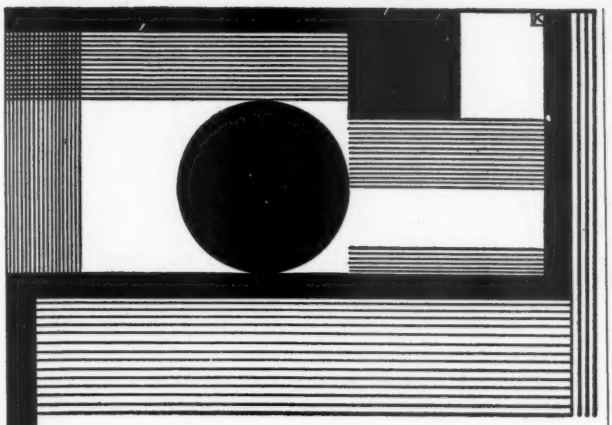
It is understood to be Mr. Gengler's intention to develop immediately the chemical lakes, and that he has formed a chemical company for that purpose.

Mr. Gengler also plans, it is reported, to develop the paper mill properties and at an early date.

ABITIBI

—Power & Paper Co., now functions under permanent liquidator F. C. Clarkson, brother of G. T. Clarkson, receiver. Supreme court in appointing Liquidator Clarkson said, "What we want to do in this case is put the company on its feet to do business."





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A dyestuff for every requirement carefully standardized

Efficient and accurate laboratory and technical service

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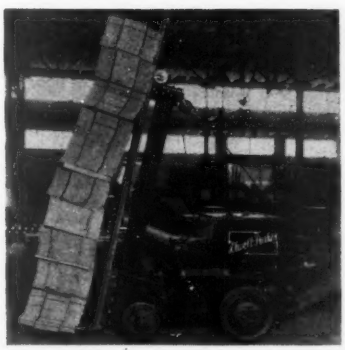

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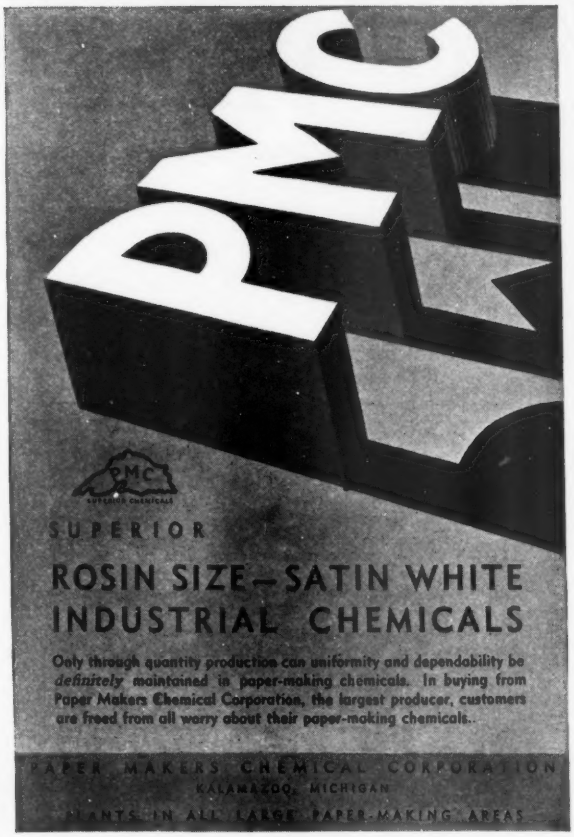
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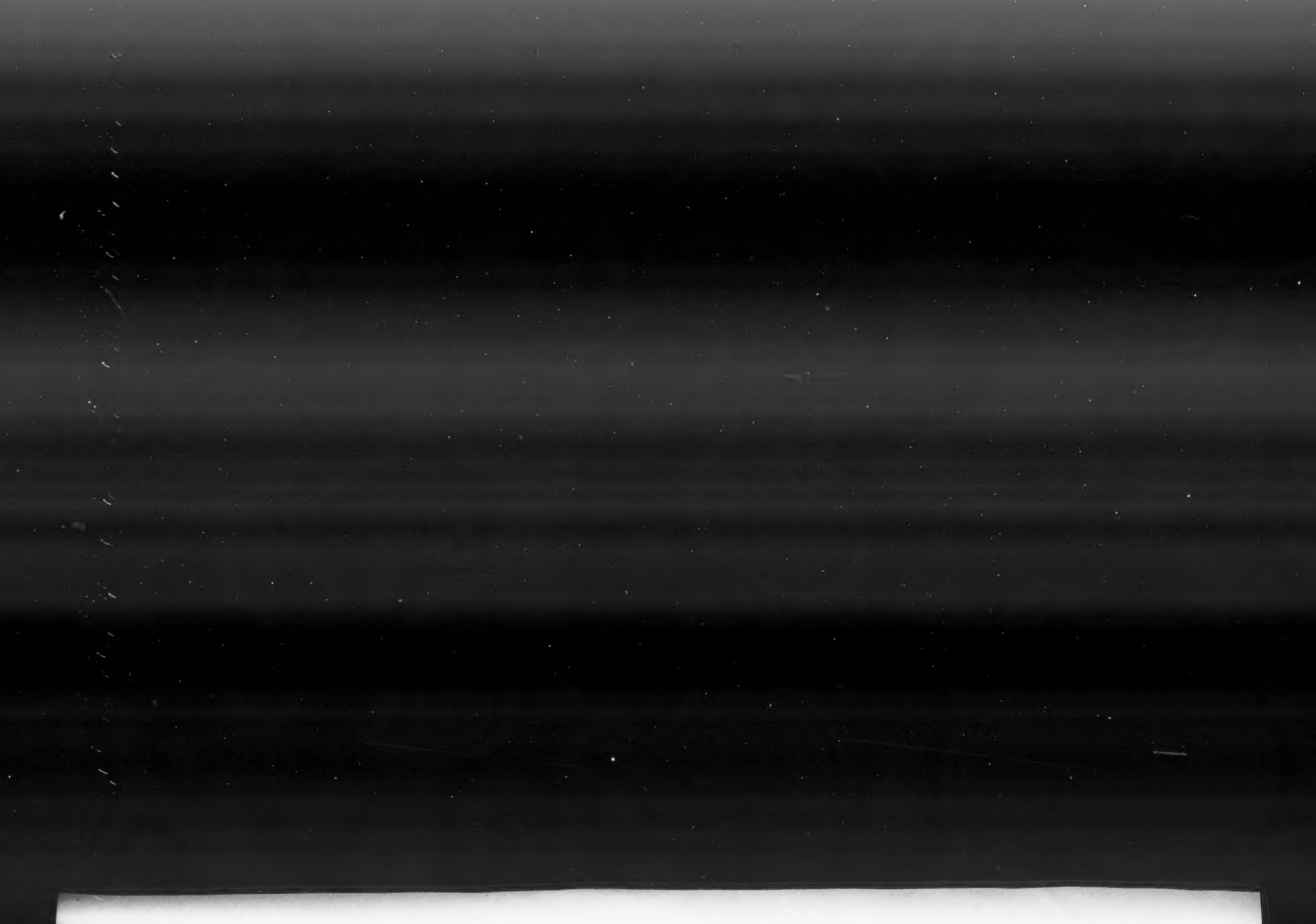

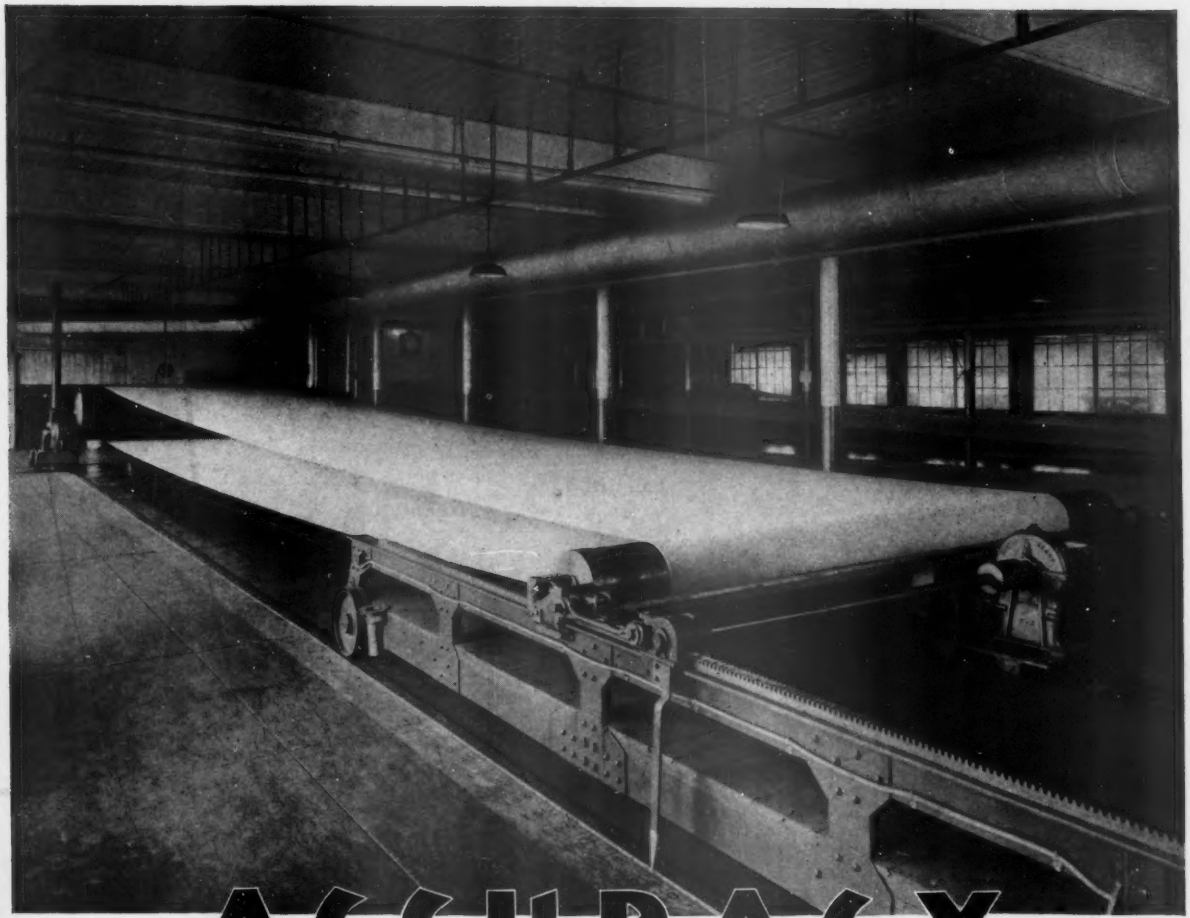

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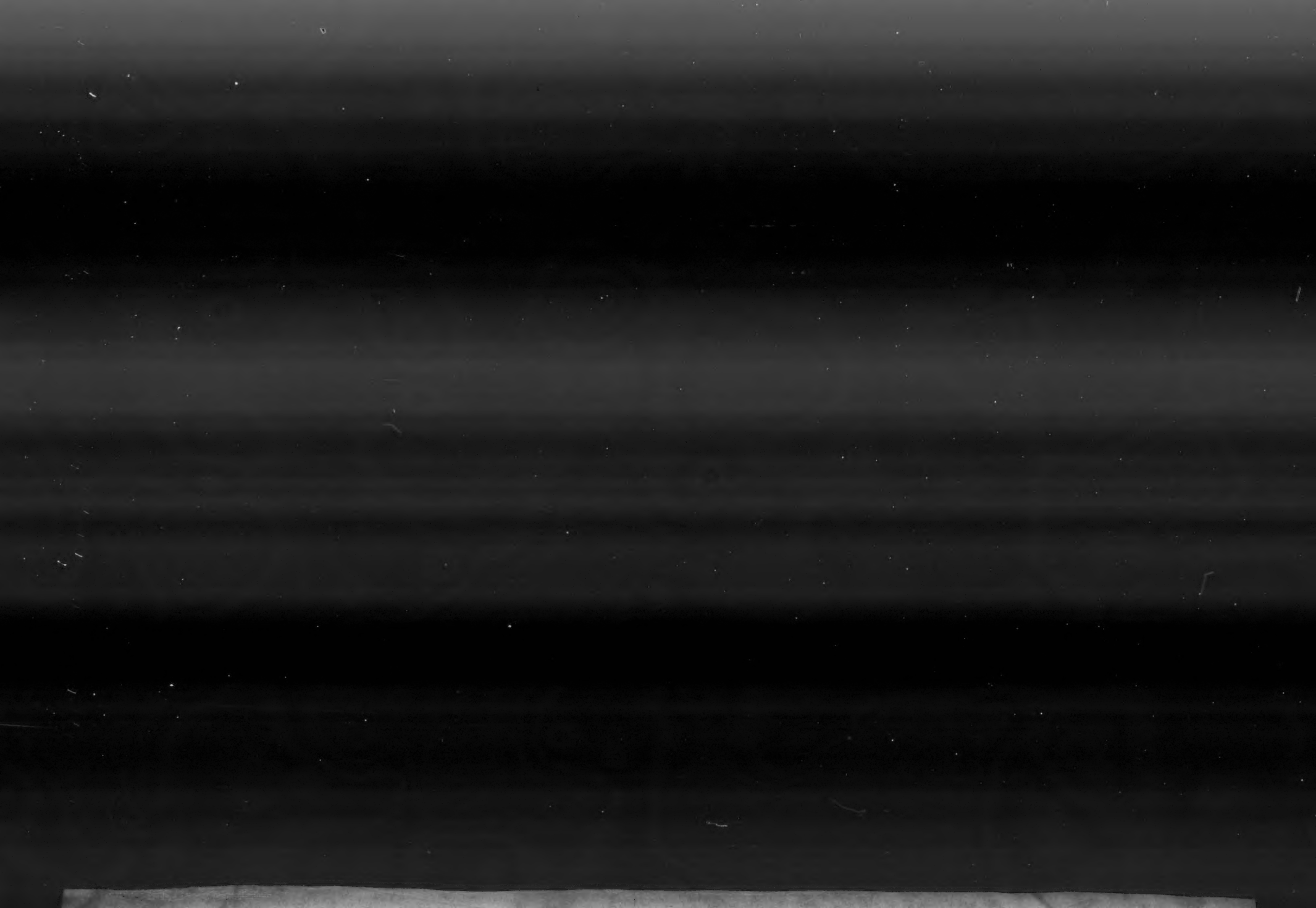
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